THE BUILDER

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Contents.

	PAGE
London's Electric Light Standards	201
Land Taxation	204
Notes	205
The Architectural Association: Fortieth Annual Excursion	206
The Old Leathersellers' Company's Hall	208
Elementary School Planning	209
Notes from France	214
Fifty Years Ago	214
Illustrations:—	
Burslem Municipal Buildings	214
Sketches with the Architectural Association Excursion	214
The Order of the Mausoleum at Halicarnassus	214
St. John's Hospital, Heytesbury	215
Books Received	215
Rust and Defective Welds in Iron and Steel	215
The London Master Builders' Association	217
Banking Premises, Parkstone, Dorset	217
National Housing Reform Council	218
The Institution of Municipal Engineers	219
Competition News	219
Correspondence:—	
London County Council General Powers Bill	220
Slating	220
London and District Borough Councils	220
Projected New Buildings in the Provinces	220
Obituary	221
General Building News	221
Stained Glass and Decoration	222
Appointment	222
Sanitary and Engineering News	222
Miscellaneous	222
Patents	223
Some Recent Sales	223
List of Competitions, Contracts, etc., Open	224
Prices Current	226
Tenders	227

SUPPLEMENT:—

Reviews of Books.

H. I. Triggs's "Town Planning: Past, Present, and Possible"; J. J. Stevenson's "A Restoration of the Mausoleum at Halicarnassus"; C. J. Holmes's "Notes on the Science of Picture-Making"; J. A. Ward's "Fresco Painting, its Art and Technique."

Magazines and Reviews.

Illustrations.

Selected Design for Proposed Municipal Buildings, Burslem. Messrs. Russell & Cooper, Architects.

Sketches with the Architectural Association Excursion. By Mr. W. Curtis Green.

The Order of the Mausoleum, Halicarnassus.

Illustrations in Text.

	PAGE
London's Electric Light Standards:—	
Fig. 6	201
Figs. 1 to 5	202
Figs. 7 to 11	202
Figs. 12 to 18	203
Gablet from Orchard House, Broadway	208
The Old Leathersellers' Hall, next the Church of St. Helen's, City	208
Elementary School Planning:—	
New Council Schools, Biddulph, Staffs	209
Derbyshire Elementary Schools	210
Derbyshire Infants' School	211
Elementary School, Letchworth	211
Undercliffe School, Bradford: New Infants' Department	212
Open-air School at Thackley	213
Ashlin's-place, Drury-lane: A London Dairy, 1859	214
St. John's Hospital, Heytesbury, Wilts	215
Rust and Defective Welds in Iron and Steel:—	
Figs. 1 to 3	216
Fig. 4	217
Banking Premises, Parkstone, Dorset. Mr. G. A. Bligh Livesay, F.R.I.B.A., Architect:—	
Ground Floor Plan	217
View	218

London's Electric Light Standards.

A Study of Incongruities.

SOME time back the Postmaster-General made a speech to a society composed of post-office employees who practise art in their leisure hours. He is reported to have said that he contemplated offering them a prize for the best design for an artistic telegraph post. If this is to encourage imitators of that preposterous product of modern days, the engineering ornamentalist draughtsman, we cry out for mercy and plead that the telegraph poles be left in the charm of their candid nakedness. And, if prizes were of any use towards inoculating the brain of the engineering ornamentalist with a few of the simple rational principles which differentiate between beauty and ugliness in *anything*, there would be a more helpful field for the offer in the problem of our street standards for electric light.

They are very much in want of a lift up out of the hands of the engineering ornamentalist, but when we say this we have also to acknowledge a law in psychology which is noticed by all students of modern art history, namely, that every newly invented contrivance, as it comes into evidence in our daily surroundings, has apparently to pass through a preliminary evolutionary tentative period of shapings, more or less raw and vulgar, till, from the flounderings of many minds, there emerge types which gradually satisfy, little by little, our sense of fitness, and finally—very little by little—take on terms of beauty.

The electric standards of great London are still very much in the painful evolutionary condition we have referred to; so much so that we are left to wonder how it is that, among the conglomerate authorities of London, there apparently exists so little æsthetic culture as to remain contented with the existing designs.

The examples we publish are not from back streets or inferior neighbourhoods, but from our foremost West-end thoroughfares—the focus centre of great London. Fig. 1 is the sketch of the electric object which dots the whole length of Oxford-street. A series of Fig. 2 gives the finishing touch to the length of North Regent-street. After crossing Oxford-street, Regent-street South takes up the artistic unities by Fig. 3, which is the thing supplied all the way to Piccadilly-circus, and across into Waterloo-place even unto dignified Pall-mall, along whose classic vista a row of the same incongruous pattern is imposed. In the Haymarket and Northumberland-road and Charing Cross-road and Strand are Fig. 4 for the centre-way standards, and Fig. 5 for those to the side pavements.

Along Fleet-street there is a recently installed new device. The narrowness of the way rendering standards impracticable, there have been substituted brackets attached to the houses. The pattern of these two rows of vernacular ironmongery is Fig. 6, and, in order that the standard to the centre shelter kerb be in harmony with these brackets on

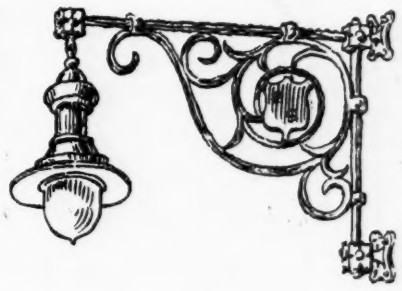


Fig. 6.

each side, Fig. 7 has been thoughtfully devised.

The fine opportunity for making these brackets individually agree with the features of each house against which they are fixed, has been availed of in one instance—but one only. This admirable exception has been made by Messrs. Hoare, the bankers. Against their severely classic and dignified old-time elevation they have put a well-wrought bracket of rich but appropriate design.

Opposite the Brompton Oratory, at the beginning of the splendid vista with it and the new great front of the Victoria and Albert Museum and the Natural History Museum, we sketched Fig. 8. After that there came to our mind the Buckingham Palace-road. We recalled that this street, in its transition from a shabby old conglomeration into modernity, has had several strokes of luck in favour of true art; among them a good Gothic church, and Stevenson's admirable row of small private mansions, and—to crown all—the whole boundary wall to an immense railway station, treated in a monumental way without a single poster sheet smeared on it—truly a gigantic and unique triumph of the æsthetic instinct over commercialism and money profit. We wondered if this

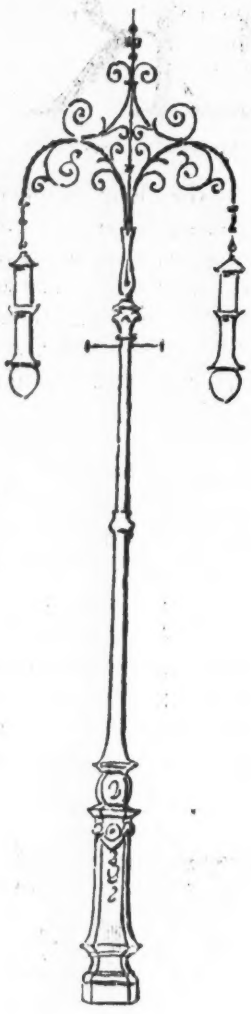


Fig. 1.

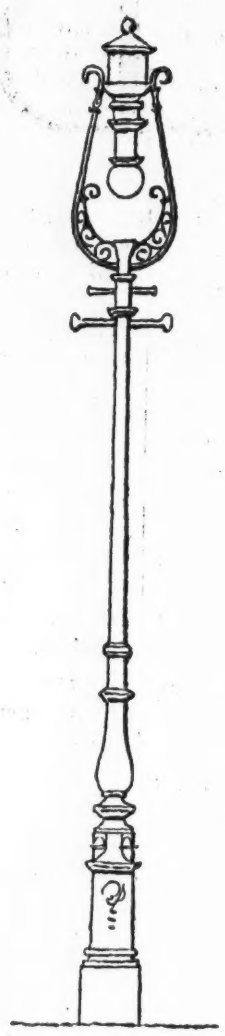


Fig. 2.

Fig. 3.

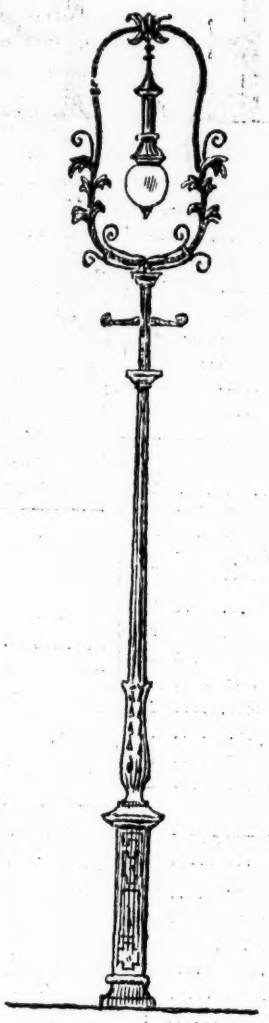


Fig. 4.

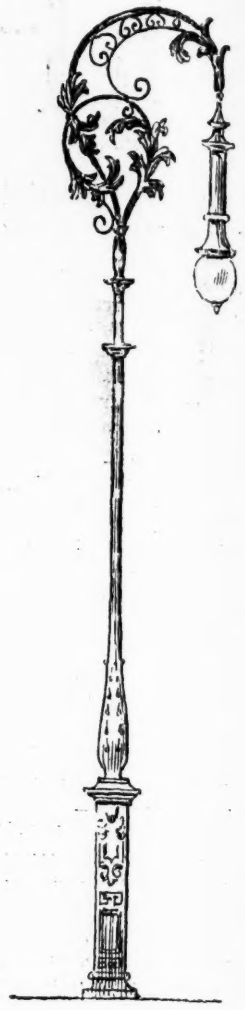


Fig. 5.

Fig. 7.

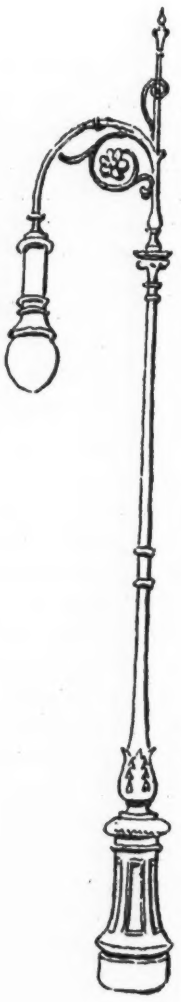


Fig. 8.

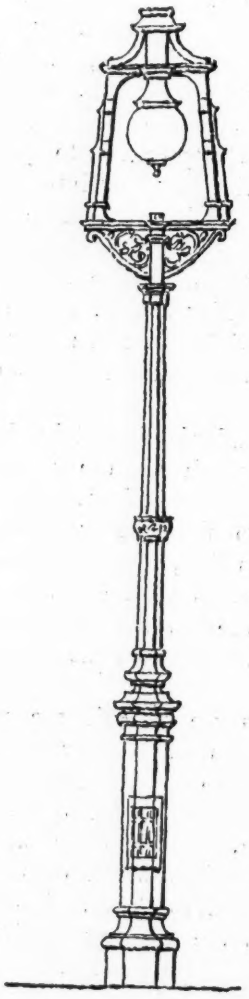


Fig. 9.

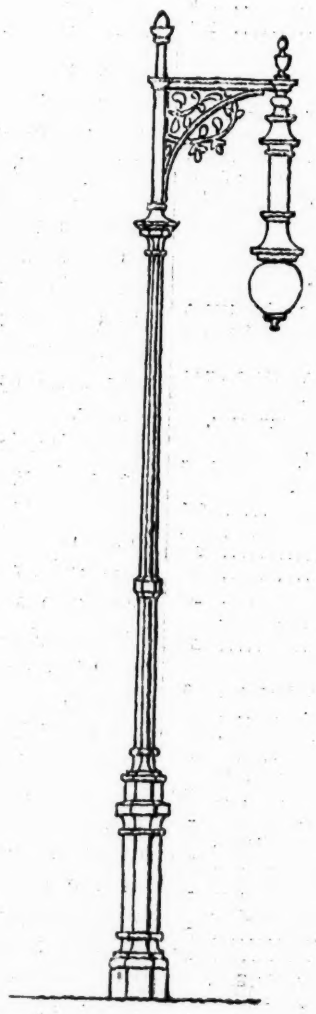


Fig. 10.

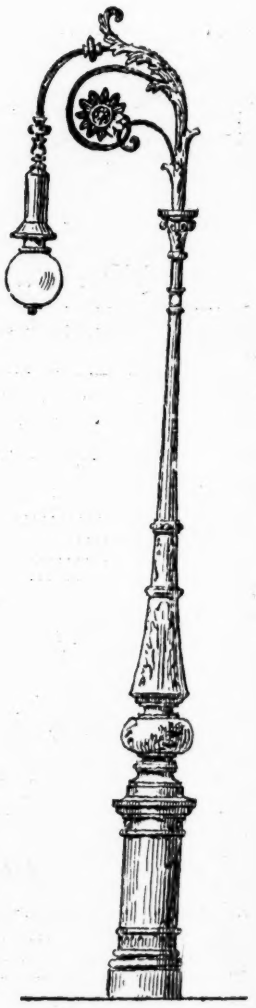


Fig. 11.

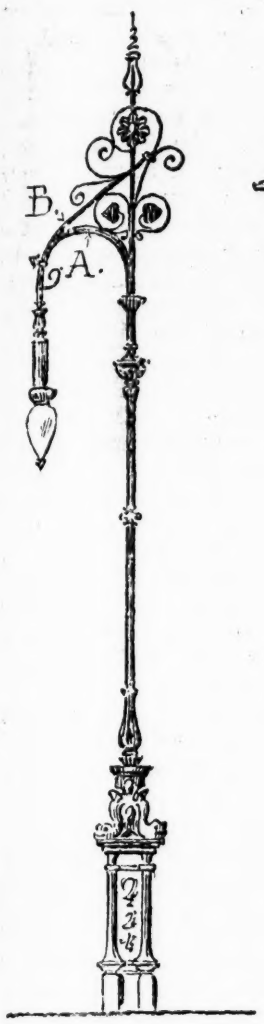


Fig. 12.

Fig. 13.

favoured road had also met any special luck with its electric standards.

On our way there, while passing Eaton-square, we found our official engineer had supplied to the whole length of that classic perspective Fig. 9; something, we suppose, which is intended by way of a contrast to the aristocratic square and its admirable Greek church; a set of props in the style of the Mid-Victorian-Methodist-Chapel-Gothic. Or is it Egyptian? On reaching Buckingham Palace-road we found Fig. 10 and felt disheartened.

We went along the Buckingham Palace-road to Buckingham Palace itself, and entered the gates to Sir Aston Webb's fine architectural setting to the great monument of Queen Victoria. We were curious to see how the electric light problem was treated at this supreme spot. We found Fig. 11; a regiment of them dotted over the place and annoyingly coming into each fresh *coup d'œil* of Sir Aston's work as we walked about. They are also continued the whole length of the great processional avenue to Charing Cross. They all of them look incongruously unassimilated to their surroundings, but we understand that these are eventually to be removed. They are not, of course, by Sir Aston Webb.

Fig. 12 sketches the type of electric light standard along the Thames-embankment. The details, particularly of the lower parts, are evidently done by an able modeller; they are in a mannerism which has got to be called "*l'art nouveau*," and our catholicity does not make us object to them on that score at all. It is not possible to show these good details in a small sketch and taken from a point of sight beyond a short length, but the good members among the details emphasise the incongruities of the others. There has been lacking, at the outset, that very little amount of constructional architectural quality which would have given a homogeneous design. How can any amount of nicety of ornamental detail tackle such phenomena as A and B, in which the eye looks at an extra thick bent pipe capable of supporting the weight of scores of

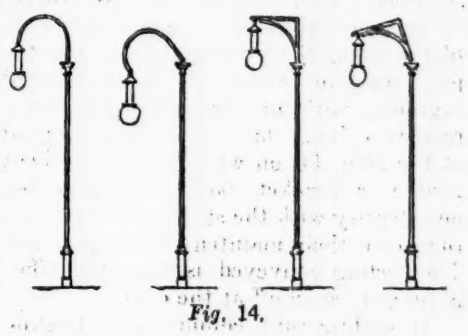


Fig. 14.

lamps, but about whose quality of cohesive metal fibre the designer was so nervously doubtful that, to save a possible subsequent catastrophe, he tied it up, with a tensile rod, to the main post? How was it possible to amalgamate with "ornament" two such glaring, silly constructive lines as A and B?

We conclude our sketches of contemporary London electric light standards

Fig. 15.

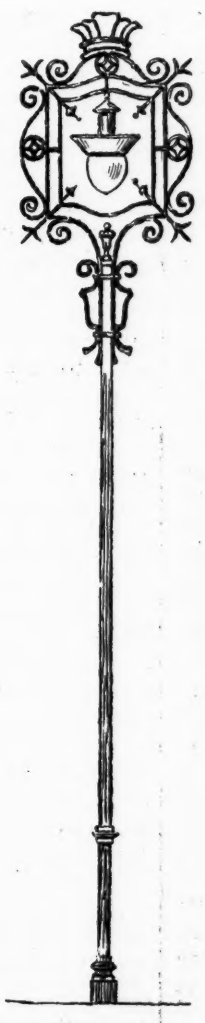


Fig. 16.

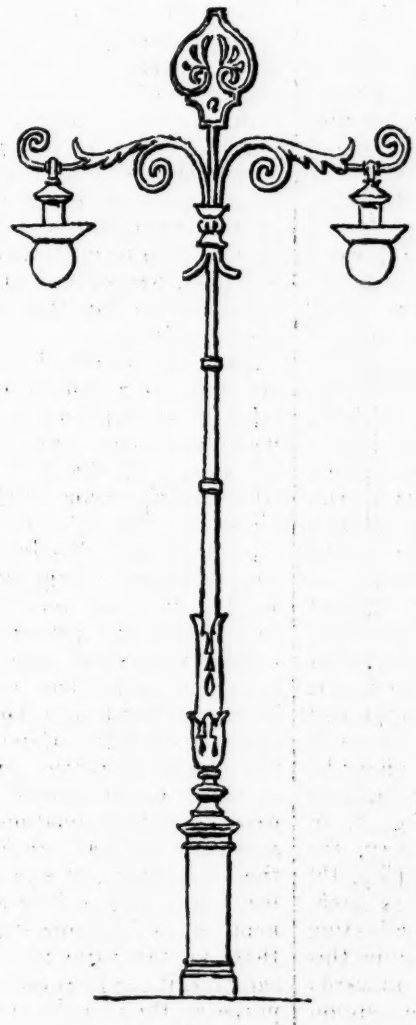


Fig. 17.

Fig. 18.

by a *chef d'œuvre*, Fig. 13, near Mr. Mountford's admirable Town Hall at Battersea. Can it be conceived that, after these many years of art schools in every parish, a draughtsman could have been found who could perpetrate such an object as Fig. 13? The phenomenon is a mystery.

Along what direction of endeavour are happier results more likely to fructify in our electric light standards?

One main point which seems to us open to protest is an entirely objectionable feature which we notice is embodied more or less in all the examples of existing electric light standards we have sketched. This feature is, we think, in essence radically wrong and is to blame more than anything else for the poor result obtained. It is the idea of beginning with an assumed architectural regular column having a sham capital at top (Fig. 14) on which is stuck a bent reed or a bracket, both objects having no integrity with the staff below to which they owe their maintenance in position. The feeling conveyed is that the affair is going to snap off at the capital.

An architectural column with its capital (as distinguished from a reed bent at top, or a straight staff *against* which may legitimately be put a bracket, and in both cases continued down into the ground for fixity) is a conception which tells of a very different purpose. A column and its capital is for supporting a perpendicular weight received from above; the capital with its abacus emphasising, by its spread surface, the place where that vertical pressure is received. Above it the idea is not admissible of cockling a stick, bent or otherwise, subjected to horizontal thrusts in various directions. Abolish the capital, and the bent reed becomes a rational idea, and so does the bracket when there is the suggestion of a rigid staff passing up above the bracket and against which it is legitimately fixed. Furthermore, capitals are not rings or straps round a staff or stem; these are legitimate and permissible.

Another point we note has reference to the actual electric light apparatus, as distinguished from the support from which it is suspended. The former consists of a glass globe, containing the light, above which is the mechanism, covered by a metal jacket and hood exposed to view and having, in its shape, no accord with the rest of the conception. The result is that the apparatus aggressively asserts its existence in glaring discord to the standard and its decorative scheme. Might not the covering be shaped with more sympathy without injury to practical considerations? Such as something suggestive of a flower bud? This idea lends itself also to the introduction of a boldly emphasised reflector of the upper rays. There is no reason for spending the light upwards. In a small way this has been recognised in some instances such as Fig. 6, in Fleet-street, and, in a bolder way, the idea is suggested by a standard (Fig. 15) in Hyde Park, near the Marble Arch, which is terminated by a dominating canopy. There is no reflector in this case, but only a black void upwards under the canopy, but the conception favours the idea. This standard appears of foreign origin. It is worth studying, showing in several respects a type in a right direction. Our sketch is partly from memory.

Whilst considering the subject our thoughts went dreaming of old signposts and, in imagination, translating them into electric light standards untrammelled by self-consciousness, and in the spirit in which we fancied they would have done it in the old days. Many old village signposts came to our mind, and among them the well-known one to the Duke's Head Inn at Leatherhead. Fig. 16 is the Duke's Head sign, with practically little more change than the substitution of the electric lamp for the signboard and an iron post for a wood one.

In the matter of twin lamps for road centres, such as those in Oxford-street (Fig. 1), we sketch a suggestion (Fig. 17) as a variation on the bracket principle which might mature to something on right lines.

Fig. 18 is a rough sketch of the new standards around the podium of the Queen Victoria Memorial. The treatment of the head of these is in a true spirit of constructional design.

LAND TAXATION.

THE proposals of the Government as expressed in the Finance Bill alter so much from day to day that it is difficult to follow them. The important modification that the costs of valuing the land shall be borne by the tax-payers collectively and not be placed upon owners individually has to some extent met some of the objections urged against the Bill, but has by no means rendered the Bill unobjectionable. The owner of land will not have to furnish a valuation of his land obtained at an expense wholly disproportionate to the tax he is called upon to pay, but it must be remembered that if he takes no steps he will have to accept the Government valuers' valuation, a valuation which it appears is to be made by officials working at high pressure and at a low scale of remuneration for the character of the work involved.

The objections to this form of taxation are only to a small extent diminished, since it is apparent that the wealthy land-owner can avail himself of the provisions of the Bill to rectify the Government valuers' valuation—he will object to the valution, give notice of reference, and finally appeal to the courts, and on a large estate it may well pay him to do so—but this will not be the case with small properties or with the builder with small capital, all of which is engaged in his business or in the land he is holding to develop, and the small land-owners will perforce have to accept the "happy dispatch" provided for them at the Government's expense. The expenses of the valuation will so diminish any revenue that can be derived from these new taxes, at any rate for the first few years, and so long as the taxes are kept within the limits at present proposed that on the principle *de minimis non curat lex*, it would appear that for revenue purposes they might well be dispensed with. No one can have read the debates on the undeveloped land tax without perceiving the disquietude evinced on both sides of the House as to the effect it may have not only upon building development, but also on Town Planning and open spaces. The building trade, which depends upon an altering supply and demand and is very sensitive to all kinds of considerations affecting the market in varying localities, will be seriously encumbered with this class of legislation. Take the latest concession of the Chancellor of the Exchequer in connexion with building estates in process of development, which only exempts estates where it can be shown that at least 100*l.* per acre has been expended in developing the land within the last ten years with the further limitation that the expenditure must be confined to roads, including paving, kerbing, metalling, and other works in connexion with roads or sewers. If the building trade has been depressed during the past ten years under more or less normal conditions, is it likely to be revived when such clauses as the above come into operation and when nearly every operation is subject to the provisions of a complicated, if not incomprehensible, Act of Parliament?

Some incentive should surely be offered to those developing building estates to preserve open spaces, and thus to improve the conditions of life in newly developed areas, yet we find such spaces as Berkeley-square subjected to taxation unless, according to Mr. Haldane, the public are admitted indiscriminately, or, according to the Attorney-General, they come within a new amendment leaving it for the Commissioners to be satisfied "that the land is being kept free of buildings in pursuance of any definite scheme . . . for the development of the area of which the land forms part and that it is reasonably necessary in the interests of the public or in view of the character of the surroundings or neighbourhood that the land should be so free from buildings." Why should a person developing a building estate and leaving open spaces at a loss to himself have to obtain the approval of the Commissioners? Rather than embark on such an inquiry he will add to his profit and save himself from taxation by building over all the land.

At the time we are writing, the latest concession of the Government is to exempt gardens of less than 5 acres from undeveloped land tax. We welcome this concession, as we have always urged that large gardens should be encouraged as contributing to health in suburban areas, but as each concession diminishes the importance of the tax for revenue purposes, is it too much to expect that the undeveloped land tax should be abandoned altogether as hindering development and imposing burdens on a depressed industry in relation to transactions at their most risky and speculative stage?

MORAVIAN CHURCH, KINGSTON, JAMAICA.—Messrs. W. D. Church & Son, of London, have been appointed architects for the new Moravian church to be erected in Kingston, Jamaica; the old building was destroyed by the earthquake on January 14, 1907, and 10,000*l.* is now being raised to replace it.

NOTES.

Blackfriars Bridge.

WITHIN the next three or four weeks a welcome addition will be made to the cross-river communications between the City and Southwark, by the completion of the Blackfriars Bridge widening and the connexion of the northern and southern tramway lines of the County Council. The inconvenient and obstructive tram terminus in the middle of Blackfriars-road will become a thing of the past, and daily passengers to and from the City will no longer have to consider the relative demerits of a dusty or muddy walk, or a tedious ride in one of the omnibuses. In addition to the remodelled roadway, 73 ft. wide, the new footwalks will each have the width of 16 ft., thus providing ample space for pedestrian traffic. The present year will probably witness also the completion of the subways beneath the dangerous crossing at the north end of the bridge—a place which will be still more fraught with peril after the new tramlines come into operation. As the pavement of the subways will be not more than 10 ft. below street level, there is reason for anticipating the general use of the new communications on the part of the public—to whom personal safety is apparently too dearly bought if its attainment involves descending and ascending more than a very limited number of steps.

Abandonment of the Proposed Building Code, New York.

ARCHITECTS and structural engineers in New York have reason for congratulating themselves on having escaped the disabilities foreshadowed by the new building code, which was vetoed by the Mayor a few days ago. Other people besides those practising in New York may justly feel relieved at the abandonment of the regulations, because for some years past the building codes of New York City have been taken as models by various communities, and to bring the matter home to British interests we may point out that if the new law had been passed it would in all probability have influenced the clauses of future building regulations drawn up by municipal authorities in this country, and notably by the London County Council under the powers about to be conferred by Parliament for the amendment of the London Building Acts. In commenting upon the veto of the recently-defunct ordinance, the *Engineering News* makes a suggestion very much to the same effect as one we put forward a week or two ago in connexion with the formulation of rules for reinforced concrete construction. Our contemporary says that the task of discriminating between good and bad requirements must be placed in more capable hands than those of aldermen, and urges that the American Society of Civil Engineers and the American Institute of Architects should insist upon their right to take a share in the formulation of the new building code which is still required for New York. Our own architectural and engineering institutions would thoroughly deserve the gratitude of their constituents and the public generally if they would bring strong pressure to bear upon the County Council with the object of securing due consideration to their views in respect of new building regulations for London.

London Water Supplies.

THE annual report of the Metropolitan Water Board states that the average daily supply during 1908-9 was 224,200,000 gallons, of which 57·27 per cent. came from the Thames. The daily average quantity gauged at Teddington for the same year was 983,700,000 gallons. Thus, in round figures, the open mouth of London was proved capable of drinking a quantity of water equal to nearly one-fourth of the volume actually passing over the weir at Teddington, although the proportion of natural flow abstracted by the Water Board and other authorities was only 12·04 per cent. The total number of services in Water London at the end of the financial year showed an increase of 12,390 which, with the increase of 0·39 gallons per head, accounts for the augmented average daily supply of 4·8 million gallons. Although no addition was made during the year to the effective storage reservoir capacity of 8,844,700,000 gallons, it should be noted that reservoirs with the capacity of some 6,000,000 gallons are in course of construction and authorised but not commenced. The report contains references to the research work, to which we have called attention on previous occasions, showing that the storage of raw water is a most valuable safeguard, tending to foster a trustworthy sense of security on the part of the Board and the public alike.

The Newport Dock Disaster.

IN commenting upon the unfortunate collapse at Newport, we suggested in our "Note" of July 10 that the disaster might be attributed to movement of the earth owing to the disturbance of natural conditions insuring equilibrium. From the evidence of Mr. R. C. H. Davison, M.Inst.C.E., consulting engineer to Messrs. Easton Gibb & Son, the contractors for the Newport Dock extension works, it appears that our surmise was substantially correct, that witness stating the conclusion that the collapse was due "to a sudden unforeseen movement of the surrounding earth, and not to pressure." If pressure had been a primary cause then the design of the timbering might reasonably have been regarded as inadequate. We are pleased to find that no such imputation has been brought against the work of the contractors, by whom every precaution seems to have been taken for the protection of their workmen. Mr. Davison and Mr. Easton Gibb agreed in welcoming any future aid that might be forthcoming as the result of Government inquiry with the object of rendering deep-trench work less dangerous. So far almost the only tangible hint for guidance afforded by the coroner's inquest is that more complete and vigilant supervision might perhaps have been exercised by the gangers and that more frequent reports as to conditions and indications thereby revealed would have been helpful to the technical staff of the contractors.

Changes at Whitehall and Old Scotland-yard.

THE manifold alterations in progress on the Crown land involve the demolition of premises in Old, or Great, Scotland-yard; the laying out of a road 40 ft. wide from Whitehall through the yard to Victoria-embankment; the stopping up of an accommodation road in Great Scotland-yard; the erection of a new Central London recruiting depôt in lieu of that at the rear of the National Gallery; and the widening at its western end of Whitehall-place. The premises to be pulled down embrace the detached or island block, and the offices, along the north side, of the Chief Inspector of Reformatories and Industrial Schools. The latter building had been the Palace Court, as transferred thither from Southwark in 1801 and served, until its abolition on December 31, 1849, by judges and officers of the Marshalsea Court of the Queen's House, for actions arising within twelve miles—the City excepted—around Whitehall Palace. That building and the island block in the middle of the yard were taken over for purposes of the Metropolitan Police upon the establishment of the force in 1829; the Police (headquarters) remained there until they removed twenty years ago to New Scotland-yard, Canon-row. Of late years the yard has been entered from Whitehall through the archway at the side of No. 1, Whitehall; J. Chawner rebuilt the archway in 1824, carrying it up another floor—see, in the Crace collection, his coloured drawings of the old and later archways. The archway succeeded the former northernmost gate of the palace precincts. No. 1, Whitehall, which has given way to the new offices for the Woods and Forests, etc., was built by Robert Adam in 1771, and was a characteristic example of his style carried out in brickwork. There is a view of the elevation in the "Crowle" Pennant, British Museum; the plate, by R. Blyth, is lettered: "Elevation of a house at Whitehall restored as a board-room for the Paymaster-General," etc. Above the attic (fourth) story was a trophy of arms, with the lion and unicorn as supporters.

Fairseat House, Highgate Hill.

THE House of Lords Committee have found as proved the preamble of the London County Council's Tramways and Improvements Bill, but decided that for carrying the Highgate tramway over the site of Fairseat House no more of the property should be included within the deviation limits than is necessary for the road widening. The extent of the contemplated encroachment will thus be minimised. Fairseat House was the residence of the late Sir Sydney H. Waterlow, Bart., who twenty years ago presented to the Council on behalf of the public the grounds, extending over 29 acres, of his Fairseat estate, together with Lauderdale House, on the southern slopes of Highgate-hill, as a place of resort and recreation—since known as Waterlow Park. He further gave a sum of 6,000*l.* towards the subsequent acquisition of Fairseat House, at that time leased to a tenant, with its 3 acres of lawns and gardens. Lauderdale House, the home of John, Duke of Lauderdale, and, it is said, of

Nell Gwynne, was restored, under the directions of the late Mr. Blashill, by the Council; to it appertained a fine old kitchen garden flanked by a massive buttressed wall of red brick, moss-grown and over-capped with ivy.

A New Architectural School.

THE Birmingham Municipal School of Art will open on September 13 the first session of their new Day School of Architecture. The school course will be spread over four or five years. The intention is that the first two years should be spent at day classes, taking the place of the first two years of articled pupilage. The latter two or three years will be spent at evening classes, and will run concurrently with articled pupilage. The fees will be very moderate, and the school should do much to maintain the standard of architecture in the Midlands. Third and fourth year students will have the opportunity of using the laboratory equipment of Birmingham University for their scientific studies, such as testing the strength of materials, etc. Several prominent architects in the Midlands have promised to forego the whole or portion of the fee ordinarily received by them in the case of pupils who shall have attended the school. We wish the venture every success; certainly the facilities for learning the practice of architecture have never been as great as at the present day. We can only hope that the number of first-class men thus produced will find sufficient scope for their abilities.

THE ARCHITECTURAL ASSOCIATION:

FORTIETH ANNUAL EXCURSION.*

CHELTENHAM AND NEIGHBOURHOOD.

Third Day—Wednesday.

THE whole of this day was devoted to Gloucester. Meeting at the cathedral at eleven o'clock, the party was received by Mr. F. W. Waller, under whose able guidance the building was inspected. It has already been better described than can be done here; reference should be made either to Mr. Waller's book or to the excellent cheap handbook by Mr. Massé, in Bell's Cathedral Series, in which many of his interesting diagrams are reproduced. The condition of the central tower, however, has lately been causing anxiety, and precautionary measures are now being taken, in the course of which numerous interesting facts have come to light. These were most lucidly explained by Mr. Waller, with the help of a fine series of accurate ½-in. scale plans through the various stages and other diagrams which he has prepared, and they may be set on record here. The dead weight of the tower has been calculated at 4,700 tons. This is carried by the four piers of the crossing—parts of the original Norman church—which are loaded to the very daring extent of 12 to 13 tons per foot super., or about double what would be considered allowable in modern practice. The lower stages of the tower are of substantial construction; they set in about 9 in. inside the base which carries them. Probably with the idea of reducing weight the topmost stage is of startlingly slender substance—in the panels only 8 in. and 9 in. thick, while the skeleton corner pinnacles are supported at their inner corners only by light squinch arches thrown across the angles of the tower at the level of the roof. These pinnacles weigh 25 tons each! The wind pressures have been calculated as follows: 30-mile gale, 7½ tons on any one side, or if diagonally, 12 tons on two inclined faces; 60-mile gale 36 tons and 45 tons respectively.

A recent addition to the cathedral which excited great admiration was the beautiful series of windows by Mr. Christopher Whall in the north and south walls of the Lady Chapel, and a window by the same artist at the east end of the Chapter House. Mr. Whall's windows are translucent; they have no affectations of archaism in the figure drawing, which is nevertheless restrained and decorative; their colour is sparkling, and the beautiful opalescent character of the white glass used, in combination with their other qualities, renders them extremely satisfying.

Many members elected to return to the cathedral during the afternoon, after lunching at the New Inn, the XVth century building built by John Twynning for the accommodation of the large number of pilgrims visiting the shrine of Edward II. Others, however, accepted the alternative invitation of Mr. Waller, and were conducted by his assistant, Mr. Trew, on a tour of inspection of the numerous old buildings in the city. Several fine Georgian houses were among these; the house known as Forester's Hall, and one situated in Westgate-street, standing back from the general frontage line, with ramped wing walls and piers with urns effectively treated, received the most attention. There are also numerous examples about the city of fine gate piers and urns. The five old churches of Gloucester were on this occasion neglected by the party, save that the virility of design of St. Michael's tower at the corner of Eastgate-street and Southgate-street caused an involuntary halt in passing to admire the daring unconventionality of the XVth century builders who could produce such a design. Its solidity of effect is in most striking contrast to the cathedral tower.

The heat experienced during the first two days of the excursion on this day reached its climax, and seriously militated against the quantity of work produced.

Fourth Day—Thursday.

The programme for this day was one of the best, and included some interesting modern work. Starting from Cheltenham about ten o'clock for Bourton-on-the-Water, brakes conveyed the party thence to Upper Slaughter, where the splendid Manor House, lately used as a farmhouse, but now in course of repair for the occupation of Mr. Brassey, was inspected. A vote of members would probably decide on this as the most delightful of all the fine old houses visited during the excursion. The entrance front—a charming natural composition of four gables, the one above the projecting porch less than the remaining three—faces west to a walled entrance court, and the L-shaped house stands on land sloping rather sharply to the north-east, the arm of the L running east and forming an extended south front with three equal gables. The texture of the walling in very thin rubble courses with raked joints, a soft cool grey in colour, harmonises finely with the quoins and window dressings in worked stone (apparently Guiting), presenting a glowing patch of warm yellow-brown here and there. The simple and restrained Elizabethan vernacular style (so different from the swaggering pretensiousness of the fashionable work of the period) is a delight to look upon, and there is that obvious rightness about the detail, whether in chimneystacks, parapets, finials, or mullions, which can only result from constant familiarity with the use of good materials and natural methods. It is perhaps worthy of note that the parapets in these gables are only just sufficiently high to allow the copings to cover the stone slating behind—gable copings in modern work are generally perched altogether too high, producing a lean appearance.

The porch front—an essay in the "fashionable" manner—is either a slightly later addition or the imported work of a more self-conscious designer; probably the latter. In it "the Orders" make their appearance. One feature of recent insertion has a very damaging effect upon the house. Originally the water from the roofs was carried off by plain stone projecting gargoyles or rain-water shoots. These still exist, but have been pierced and connected to square cast-iron rain-water pipes of huge and ungainly dimensions. Painted "light stone colour," they are much in evidence.

Very little time was available for a visit to the church, standing in a churchyard sloping steeply to the north. It is, however, rather an interesting structure with a transitional Norman nave of three bays and western tower space. The arcade is of chamfered pointed arches supported on shallow square caps of great spread, and the chancel and tower arches (also pointed) have chevron and other Norman enrichments, but appear open to suspicion. The church was restored in 1877. There is a wide north aisle with a modern mortuary chapel at the east end.

An interesting stone bell-cot surmounts the east gable of the nave. The tower is square and low in proportion, with battlements and slender corner pinnacles. Its upper stages are of later date than the nave. In the churchyard is an old stone font dismounted from its pedestal.

Adjoining the churchyard on the south-east is a charming group of cottages altered by Mr. Lutyens and shown in Mr. Curtis Green's drawing.

Leaving Upper Slaughter with reluctance, a drive of about two miles brought the excursionists to Nether Swell Manor, a large modern house by Mr. E. Guy Dawber, who kindly attended and presented the members to Mr. Scott, the owner. After an inspection of the house, originally built in 1905 and recently largely extended, the party were most hospitably entertained to lunch by Mr. Scott, who was afterwards thanked by the President in felicitous terms for permitting the invasion. Drawings of the original house and the recent additions have been exhibited in the Royal Academy, and in our issue for May 15 last an illustration of the building was given.

The garden court facing the entrance and the terraces (with fine urns from Versailles), overlooking a fine expanse of country to the west, are delightful features, and Mr. Dawber's use of local material is very successful. The walling stone is quarried on the estate, and set with raked joints and dressings of Farmington stone—a material with excellent weathering properties. The roofs and some of the gable walls are covered with stone slates from Eyford, near by. All the casements and glazing are executed by Mr. John Pye, of Moreton-in-the-Marsh. The recent alterations have been most cleverly contrived, and have resulted in some picturesque effects, legitimate only when naturally achieved by such necessities.

Chastleton House, the next place to be visited, was reached after a drive of about 7 miles, mostly through shady lanes which presented a welcome relief from the heat of the cloudless sky.

The party were received in the hall by the owner, Miss Whitmore Jones, and were afterwards kindly conducted through the house by Mr. Whitmore Jones, her nephew. Chastleton was built in 1603 by Walter Jones, and is in quite a different category from Upper Slaughter, Charlton Abbots, or any other of the manor houses visited during the excursion. Its difference lies in the fact that it is devised upon a formal rather than a natural plan. This is illustrated in Mr. Gotch's "Early Renaissance Architecture," and is in the form of a square with a small internal courtyard—practically the counterpart of the modern lighting area. The south or entrance front has two projections symmetrically arranged on either side of the axial line of approach. One forms the porch and is entered at the left of the central steps; the other serves as the bay on the hall dais,

* Continued from last week.

which is intact—though, in fact, it is a bay only in name, since it contains no side windows. On the east and west fronts are centrally-projecting towers containing staircases, and on the north front a central bay. Each front is, therefore, a symmetrical composition in the main, though a fine chimney-stack well grouped with one of the gables of the west front introduces a spice of irregularity there. The most striking characteristic of the house is its lofty proportion, accentuated by the staircase towers and narrow projections

The various rooms are full of interesting detail, and contain much fine furniture and tapestry. The hall screen is an excellent example of Jacobean work, and the room entered from behind it has Georgian panelling. At the opposite end is the little parlour, with some good Jacobean panelling painted white. The Great Parlour, at the north-east corner, has a modern ceiling, which tripped several members who attempted to fix a date. The house is rich in plasterwork—ceilings and friezes—and has numerous examples of fine chimneypieces in stone and wood, bearing the arms of various neighbouring families, and suggesting the probability that it was customary for the owner's friends each to present him with one such. That in a room on the first floor with the Fethplace arms and splendid mantling is perhaps the best; this room also has a pendant ceiling. The Great Chamber has a chimneypiece with the arms of Walter Jones and Eleanor Pope, and a splendid ceiling with sinuously curving flat moulded ribs forming the pattern, and interstices filled with sprays of the most slender and delicate modelled foliage. In a bedroom adjoining is a recently-discovered fireplace of simpler character, and next to that one with the arms of Sheldon, of Weston. The long gallery runs from end to end of the north front, and has a fine segmental modelled ceiling, considerably restored, and some good oak panelling on one side. Terminating each of the towers is a copper vane in the form of a flag with lion rampant (the arms of Jones) in pierced work. From the summit of the east tower a fine view of the lovely formal garden below is obtainable, and several members seized the opportunity to sketch from this point. The roofs have been renewed with Westmorland slating. Before leaving for the return journey *viâ* Moreton-in-the-Marsh members were kindly entertained to tea by Miss Whitmore Jones.

Fifth Day—Friday.

Another very attractive programme had been arranged for the last full day of the excursion. Proceeding by train to Winchcombe Station, a drive thence of about 3 miles brought the party first to Postlip Manor House. This was rebuilt by Giles Broadway, whose initials, with those of his wife Agnes, appear above the fine stone chimneypiece in the drawing-room on the first floor. The dining-room chimneypiece bears the date 1614, which is presumably that of the present building. By the kindness of the owner, Mr. Stewart-Forster, members were allowed free access to all parts of the house, and the majority quickly settled down to sketch, the favourite view point being one commanding the east side of the house, with its rows of small dormers and the tiny Norman chapel on the higher ground behind. Others sought the rising ground, from whence a most picturesque jumble of roofs, gables, and chimneys was presented to view. The main or south front of the house has a succession of steep-pitched gables, rather lacking in relief. Internally is a delightful fountain court. The production of water-colours, for almost the first time, at once resulted in a gathering of clouds, and the sky became sunless and threatening. Rain, however, held off, and later the sun reappeared.

Leaving Postlip at one o'clock the excursionists drove to Winchcombe for lunch, after which an all too short time remained for the adequate appreciation of the ancient capital of Mercia. The once famous abbey was entirely destroyed after the suppression of the monasteries, but memories of its activities still cling to the place. The George Inn, one of the ancient pilgrims' inns, bears the initials "R. K.," those of Richard Kyderminster, Abbot in the time of Henry VII. Looking up towards the street from the lower end of its ancient galleried yard, it makes a charming picture. In the church vestry also is a door recently brought from a farm once abbey property, with the same Abbot's initials. Other treasures preserved in the vestry and kindly exhibited by the Vicar are a silver-gilt Flemish burette, given in 1737 by Edward Beale, a splendid XVIIIth-century silver flagon given by the Williams of Cornden, and an Elizabethan silver chalice and paten dated 1570. The ancient paper register in tooled leather binding by Johannes Raynes, 1539, also remains. The present church was built in 1490 at the instigation of Abbot William in order that the monks might obtain the exclusive use of their abbey church. Two hundred pounds were contributed by the people, and the remainder of the cost was borne jointly by the Abbey and Ralph Boteler, of Sudeley. Comparisons are suggested with some of the fine churches built contemporaneously in the wool towns of East Anglia, particularly with that at Long Melford, which has some similarity in essentials. Though the Gloucestershire church must undoubtedly suffer in comparison, it is nevertheless full of interest. The aisled nave is of eight bays, with octagonal shafts and coarsely-moulded depressed arches. The two eastern bays form the choir, without structural division, but separated by good screens running across nave and aisles, and retaining their original doors.

East of the choir is a presbytery having on the south side very delicate triple sedilia with intermediate double tiers of canopied niches. Further east are the remains of what was apparently a Lady Chapel, or reliquary, without direct connexion with the church other than a narrow doorway. The pulpit was originally attached to the middle pier on the north side, but is now removed eastward to the screen. During the XVIIIth century a curious arrangement was introduced into the choir, where the altar stood centrally, surrounded on all four sides by rails, and with seats for the communicants on the south, east, and north sides. A similar arrangement existed at Deerhurst, and still exists at Lyddington, in Rutlandshire. At Winchcombe it was destroyed when the church was restored by Wyatt in 1872, when another extraordinary feature—a gallery facing west and filling the space above the choir—was also removed. The church contains some interesting furniture. In the vestry is an Elizabethan altar table; that in the church is of Laudian date, as is also the font, the latter inscribed 1634. There are also an ancient alms-box and a brass pendant candelabrum of XVIIIth-century design. The church, with its fine western tower and copper weathercock, forms a prominent feature in all views of the town: Opposite the churchyard is a good Jacobean house, shown in Mr. Green's drawing.

From Winchcombe to Sudeley is a drive of about a mile. Sudeley Castle is in the main of three dates—the work of Ralph Boteler in the reign of Henry VI., of Sir John Brydges about 1560, and the modern additions of 1840-57. The majority of the work of the former period now appears only as an interesting ruin forming the east and west sides of the south court. The castle was originally built in the reign of Stephen, but practically no traces of the original foundations remain in position, as the work of Ralph Boteler about 1460 constituted an almost entire rebuilding. Sufficient remains of this work to give an excellent idea of its magnificence. On the east side of the south court is the external wall of its great hall, containing a noble bay window and a good fireplace, concerning which speculation as to the disposition of the chimney was rife, since a window occurs immediately above. The hall was, rather unusually, on the first floor, approached by a newel stair, 4 ft. 3 in. wide, in an octagonal turret at the north-east corner. This still remains, together with the north gable wall, containing a fine window with a very flat arch, which gives some idea as to the original form of the ceiling or roof. The hall was about 25 ft. wide, and the width of the court from east to west about 60 ft. The west side is formed by a long range of buildings now serving as stables and the like, and approached by new entrances formed on the outer side. The southern end of this range is stopped by a massive square tower (partially ruined) with an octagonal turret at its north-east corner, and a lofty square one on the north-west. The south side of the court is open. Separating the northern court from that previously described is a low one-story corridor added at the time of the restoration in the last century. The north court is almost entirely the work of Sir John Brydges, and appears to have suffered less than the earlier buildings during the time of Sudeley's abandonment following its ruin in the Cromwellian wars. A window on the west side is dated 1572, but the bulk of the work appears slightly earlier. There is considerable character in the design of the mullioned windows moulded with a sunk chamfer, and in the simple entrance doorways communicating with the various suites of rooms, which are entered only through each other or direct from the courtyard, there being no corridor. The outward aspect of these buildings has been considerably affected by the additions and restorations made by Sir Gilbert Scott and J. D. Wyatt when the property was purchased by the Dent family (its present owners) and by them rescued from its derelict condition. A charming oriel window on the eastern front overlooking the formal garden may well be part of the work executed by Thos. Seymour, to whom Sudeley—long a Royal Manor—was granted by Henry VIII.; it may even be work designed to fit the house for the homecoming of Henry's last Queen—Catherine Parr, who was married to Seymour after her kingly husband's decease, and lies buried in the church hard by. The history of the various owners of Sudeley is not less interesting than that of the building, but for this the late Mrs. Dent's "Annals of Winchcombe and Sudeley" should be sought.

As may well be anticipated, the interior of the castle has suffered more than its fabric from its period of ill-use, and little of the original panelling or plasterwork is now to be seen. In the hands of its present owners however it has become filled with objects of beauty; the paintings and tapestries are exceptionally fine, one piece of early Elizabethan tapestry in particular being certainly among the most lovely things of its kind extant. A stone chimneypiece on the first floor has the motto of Sir Thos. Brydges, "Mainteine le Droit," to which some conjectural restorer has prefixed the word "God."

One of the rooms is fitted with panelling, chimneypiece, and furniture sold from the Petit Trianon at the time of the first Revolution.

Mr. H. Dent Brocklehurst personally conducted the party over the castle, and afterwards entertained them to tea, giving them the run of the place in the kindest manner possible.

The church, which stands a short distance to the east of the castle, is a curious little structure built by Ralph Boteler about 1460, desecrated by the Roundheads, and restored by Sir Gilbert Scott in 1858. It has a chancel and nave of five bays under a single roof, and a north aisle and sacristy. Above the west window a small square tower is corbelled out, producing a rather uncomfortable effect. On the south side of the chancel is a four-light squint window, with its mullions worked on the slant parallel with the direction of the squint. This is now filled with good German glass. Some original Elizabethan glass remains at the east end of the sacristy.

At some little distance to the north-west is a ruined grange or tithe-barn of XVth-century date.

After leaving Sudeley the party drove direct to Winchcombe Station, whence a very slow railway journey brought them again to Cheltenham, where the usual festivities followed dinner on this the last evening spent before parting.

Sixth Day—Saturday.

Saturday morning saw a party rather diminished in numbers. An invitation from Messrs. H. H. Martyn & Co. to inspect their works was accepted by the majority of those remaining, and an interesting morning was so spent. Visiting first the plaster shops, the processes of modelling and casting plaster enrichments were seen, after which in the woodworking shops the preparation of joinery was watched, and several examples of work in a more or less finished condition were admired, including an oak confessional designed by the late Mr. Bentley, and destined for Westminster Cathedral. It was gratifying to find in what high esteem the memory of this architect is held by those who have carried out his designs, several of which were shown to the party as models of all that a carver can desire. Passing through the stonemason's shop and carver's gallery, where much interesting work was in progress, a *tour de force* in the shape of an oak chimney-piece with carving in lime-wood à la Gibbons was examined, after which a visit to the smith's shop completed the round.

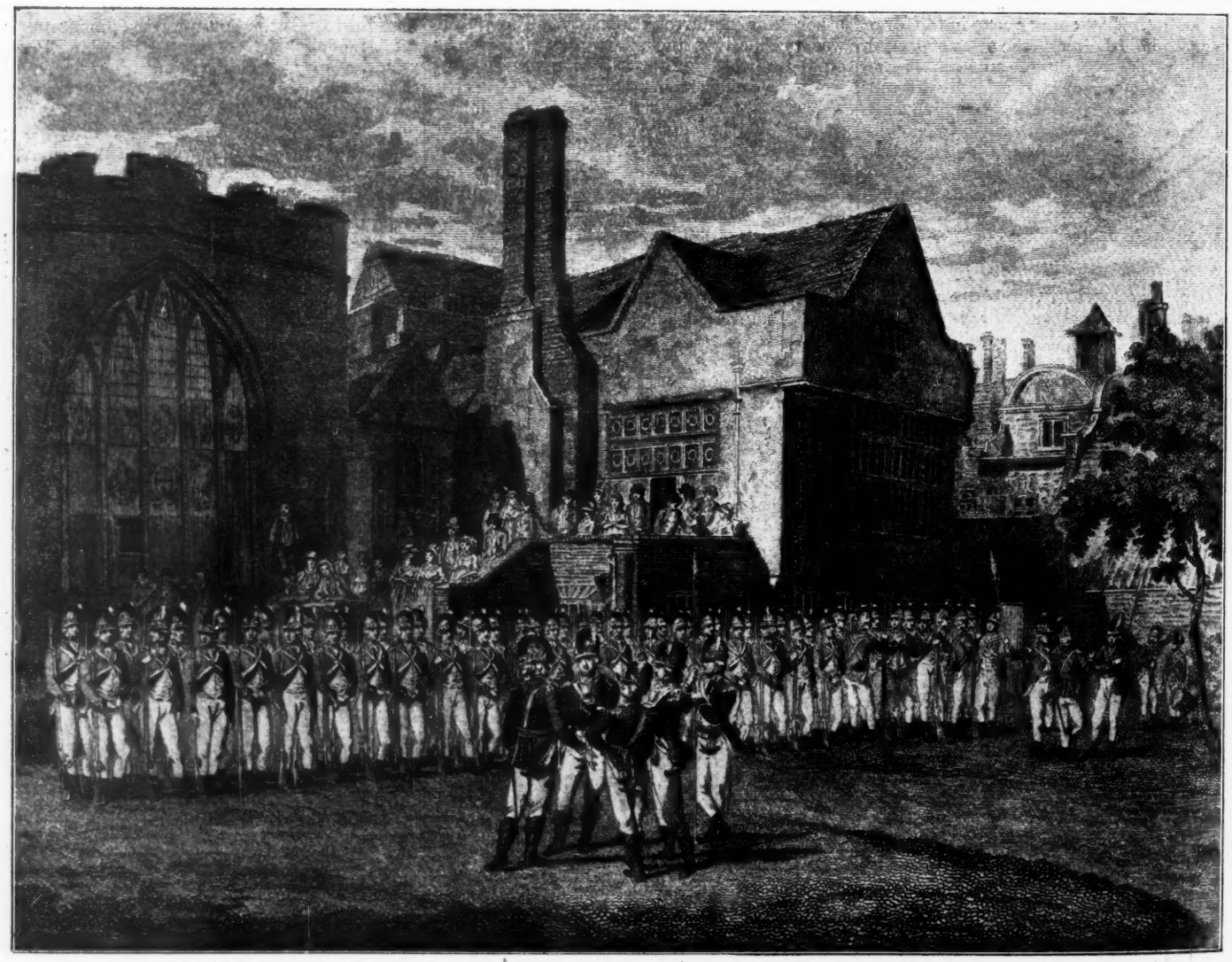
In the afternoon the remainder of the members dispersed, with many expressions of regret at the shortness of the week, and of gratitude to the Honorary Secretaries, Messrs. Talbot Brown and Hennings, for their excellent arrangements, which had served to make the excursion so enjoyable to all.

Gablet from Orchard House, Broadway.

This gablet and finial, which occurs on the return of the main gable of Orchard House, formerly Top Farm, Broadway (described in last week's report), is probably the most frequently sketched detail in the village, and has often been made the basis for modern designs. The doorway of this house, also, has been reproduced several times in other cottages near by.

THE OLD LEATHERSELLERS' COMPANY'S HALL.

OUR illustration reproduces a view, from the south-east, of (old) Leathersellers' Hall, with the company of the Cornhill Military Association in the foreground. Grignion engraved the plate for R. Wilkinson in 1799, after a coloured drawing by Dayes, which is preserved in the Guildhall Library. Adjacent to the Hall is seen the east end of the north, or "nuns'," aisle of the ancient parish church of St. Helen's, Bishopsgate, which commemorates Helena, *Piissima, Venerabilis Augusta*, the mother of Constantine the Great. That aisle, 121 ft. by 27 ft., was added to the church in or about 1216, being separated from the nave by a wooden screen fitted into the six bays, of various periods, of the arcade, and removed at the time of the Dissolution. The Company's Hall shown in the drawing was the refectory of the convent or priory which William, Dean of St. Paul's, son of William, the King's goldsmith, rebuilt and refounded out of a small priory which, together with the parish church, had been given (1180) to the capitular body. He dedicated the priory to St. Helena and the Holy Rood for black nuns Benedictine. William de Basynge, Sheriff in 1308, augmented the revenues, which amounted, *teste* Speed, to 376*l.* 6s. per annum. The instrument for dissolving the priory dated on November 25, 30 Henry VIII., has been preserved in the Record Office. The Leathersellers' Company, incorporated *temp.* Richard II., bought the conventual buildings, the nuns' aisle, or choir, excepted, with a bequest to them by John Hasilwood, 1544. They converted the refectory for purposes of their common hall and occupied the buildings until their demolition, begun in 1799, for the laying-out of St. Helen's-place, and the erection, a few years afterwards, of the Company's Hall, since rebuilt. In the north wall of the nuns' aisle are a remaining lancet window, two blocked doorways communicating with the priory, and two groups, at different levels, of hagioscopes, the one having two, the other having six, openings, or squints, converging upon the altar in the nave. The larger set of apertures, known as the "nuns' grating," is, we believe, a very rare example in England



The Old Leathersellers' Hall, next the Church of St. Helen's, City.
(From a print dated 1799.)

of the combination of hagioscope with arch-canopy and pierced stone altar or reliquary; there are similar examples in Burgos and St. Patrice at Rouen. Some nuns' seats were removed into the chancel in 1868. The floor of the nuns' aisle, with that of the "void" at its west end, lay more than 4 ft. above that of the nave. When J. L. Pearson, R.A., carried out his extensive restoration of the fabric in 1892-3 he returned the floors to their original level. There are engravings of the crypt beneath the old Hall by J. T. Smith, and by Wise after Capon's drawings, and a detailed plan by Gardner of the priory and church as in 1808, published by Wilkinson, and, by Smith, of the mermaid pump, or conduit, sculptured by Cibber for the Leathersellers' Company.

ELEMENTARY SCHOOL PLANNING.

THE following paper was read by Mr. Reginald G. Kirkby, A.R.I.B.A., F.S.I., City Architect, Bradford, at the recent Health Congress at Leeds.

Elementary School Planning.

"The vitally important question of school planning is passing through a critical stage in its history, and is entering upon a new era. Those who are chiefly responsible for the carrying out of the education of the children feel not only that the methods of modern teaching require remodelling, but that some improvements are necessary in the school buildings themselves.

It is now becoming evident to the minds of educationists that the existing models are far from satisfactory, and that some radical changes will have to be made in the planning of the schools of the future.

This movement is slowly but surely gaining ground, and it lies in the power of the members of this congress, and all who have the children's welfare at heart, to forward it and demand better conditions for the housing of our children during their school life.

Since the Board of Education first made an additional allowance for the building of central halls elementary school planning has more or less followed this type, comprising in the main a central hall with classrooms arranged round two or more sides. This type of plan appeared so fascinating on paper that it captured both architects and committees throughout the country, the result being that at least 90 per cent. of elementary schools erected during the last seven or eight years have been designed on these lines.

It is difficult to understand why for so many years educationists have been content with one stereotyped plan in the central hall type when so much advancement has been made in the administration and curriculum of school life.

The competition system of inviting architects to send in designs for school buildings is to be regarded as greatly responsible for this. Architects have felt that their only chance of success lay in adopting one type of plan; and committees, of course, have been almost compelled to accept this type, as this has been the only one offered to them.

This was borne out in the case of an architect who recently consulted with me in reference to a plan for a school competition. After admitting that there might be a better type than the central hall, he said, "If I make a departure from this type I will have no chance of success." I think this congress will agree that the time has arrived when such a condition of affairs should be altered.

Whilst the planning of modern English architecture has been characterised by great originality and ingenuity, which the exigencies of the site have often called for, and many new and fascinating studies have been presented to us, yet in school planning the same type of building has been copied for both town and country sites, for the hillside and the plain, until to-day the land is covered with hundreds of new buildings all of one kind, possessing little variety or originality.

In no other class of building in England has such a stereotyped plan been so lavishly copied as in school buildings. In Germany no attempt has been made to follow this plan. The buildings there appear to be designed to meet the requirements of the district.

Amongst the claims put forward in favour of this plan have been its economy, its compactness for working, and the easy facilities afforded to head teachers from a central hall to supervise the classrooms surrounding it, whilst the health of the children appears to have been a secondary consideration. A successful head teacher should know whether proper instruction and attention is being given to the scholars without watching each movement of the class teacher from the central hall. His proper place to direct the teaching is in the classroom, and not in the central hall.

One of the chief drawbacks to the central hall type is that it permits the vitiated and used-up air to constantly pass from one classroom to the other for the children to breathe over again. This, no doubt, partly accounts for the lassitude and lack of attention noticeable in children towards the close of the day's instruction, and also for the fact that the work of the primary school is less accurate than it used to be.

From the various tests which have been made in recent years to ascertain the state of the atmosphere in such schools, and from the inquiries and tests I have made in schools in the country, I am of opinion that the central hall plan is not the most suitable from a health point of view, and I think it is fitting that at such a congress as this we should consider the best conditions for housing our children so as to enable them fully to benefit from the instruction given during their working hours, and so fit them for their future work in the great industrial world. The advantages which may have been claimed for existing models are quite outweighed when consideration is given to the question of the children's health and to the unsuitability of the buildings in relation to modern teaching methods and hygienic science. The growing desire for healthier and better adapted schools has led in a few instances to the adoption and development of improved types of buildings, and noticeably so where city and county authorities have had the opportunity of consultation and investigation with their own official architects.

In many quarters there is a growing opinion in favour of a hall other than a central hall, and schools so provided would make way for the further development of physical instruction, which is likely to form a more important part of the curriculum in the near future. Most of the existing central halls, however, would be practically useless to meet such a provision.

Plans of schools recently erected or in progress in Staffordshire and Derbyshire, and at Letchworth and Bradford, are illustrations of these newer types, and may be of interest in the consideration of this question.

Staffordshire Schools.

Amongst the first we might consider are the Staffordshire schools, which have led the way in the matter of reform.

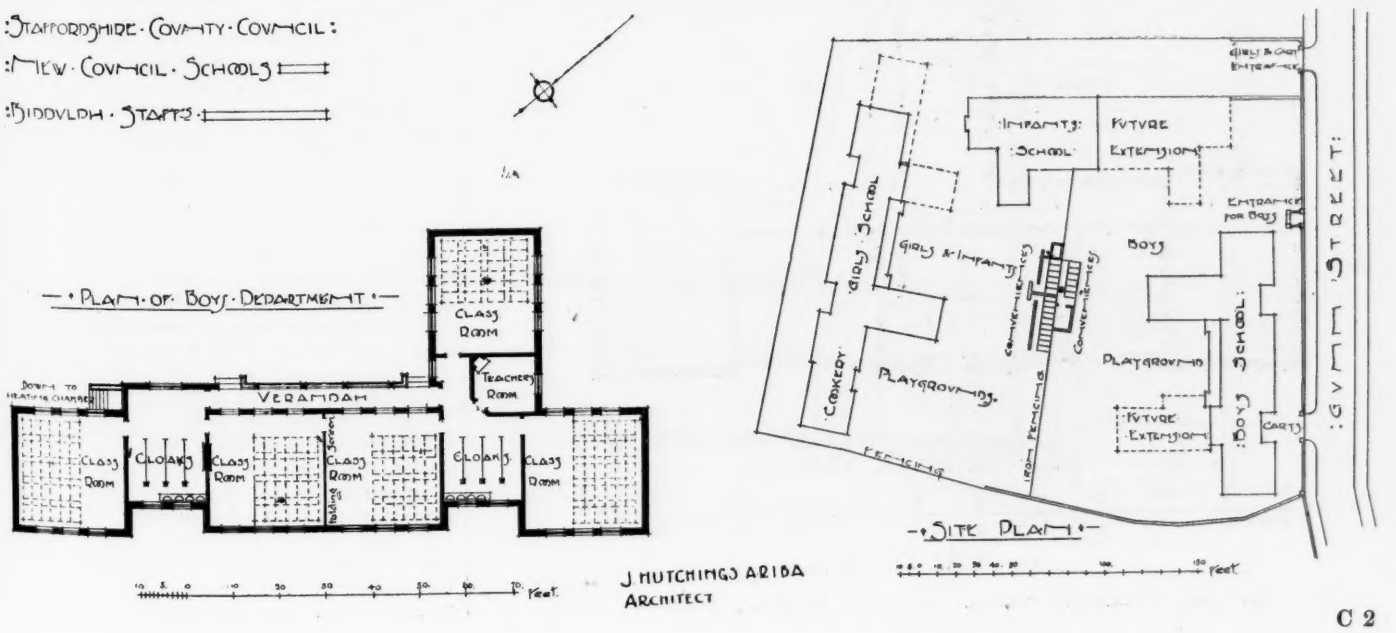
One of the first principles aimed at in these schools has been to gain cross ventilation through each classroom directly into the open air, the classrooms being connected by means of verandahs.

The windows are fitted with hoppers in the lower portion on both sides of the room and pivot-hung openings at the top, so that the rooms can be thoroughly scoured with fresh air as often as desired, and the inflow of fresh air can be regulated to suit the direction of the wind. In this way the air in the classroom can be kept pure.

The classrooms are grouped in twos and threes, with a separate cloakroom so arranged that the children can reach their cloaks and hats before passing on to the verandahs. The usual crush experienced in large cloakrooms is thus avoided. A separate drill and play hall is provided.

Derbyshire Schools.

The next type is a school erected in Derbyshire, and comprises a long marching corridor, with casement doors on either side, opening on to a verandah. The classrooms are arranged in groups at the ends and middle



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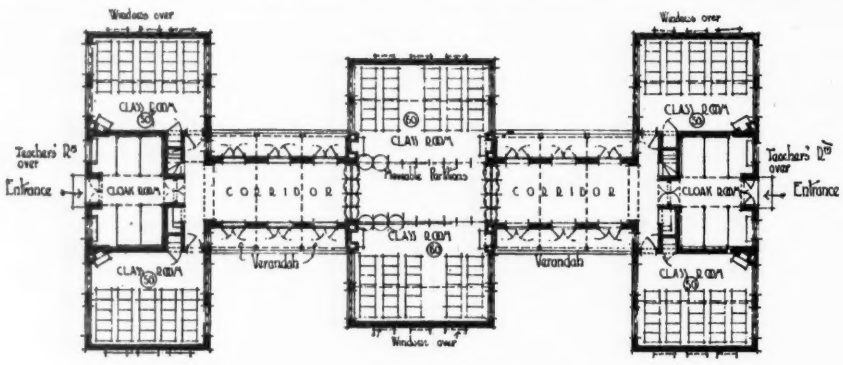
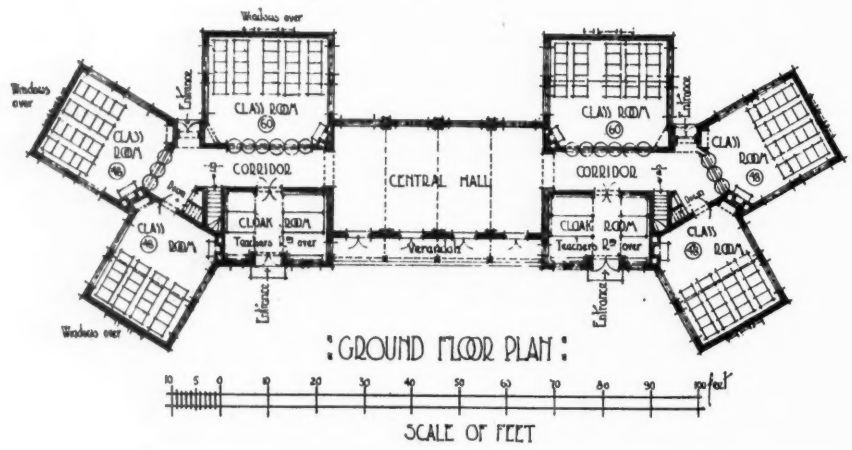
of the marching hall, with cloakrooms adjoining. In these schools the principle of cross ventilation has also been adopted.

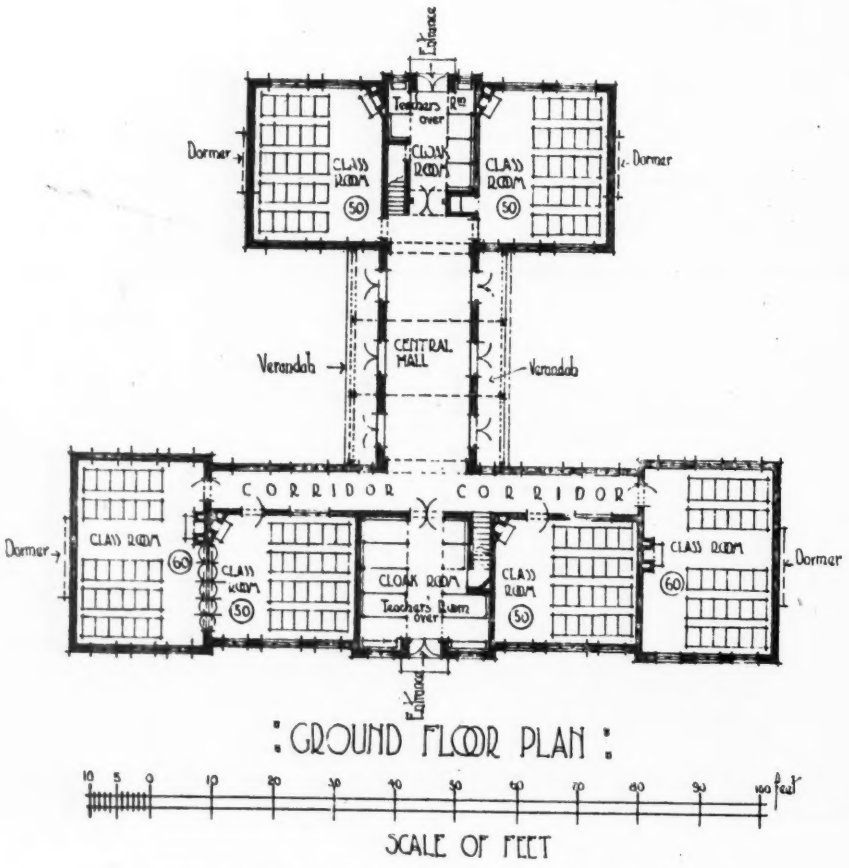
Another plan, of a school recently erected for the Derbyshire Education Committee, is reminiscent of a famous consumptive hospital. The building consists of a central hall without the many drawbacks to the central hall plan, with classrooms arranged in pairs extending from the central hall at the four points of the compass. Like the previous plans, this type provides for through ventilation. Such a school could easily be enlarged for double the accommodation if required by extending the wings, and would also provide for general central assembly in the hall if desired.

Letchworth School.

A school dissimilar from either of the foregoing in general arrangement is one now being erected at Letchworth, and is in the form of a quadrangle, with verandahs on two sides round which are grouped the various classrooms, which only accommodate thirty-two scholars, with a minimum of space of 12½ sq. ft. per scholar. On one side an assembly hall is placed, facing north, with a large south window. This school accommodates 544 children, and forms a simple yet hygienic type of plan, with through ventilation to each classroom.







Derbyshire Elementary Schools. Mr. G. H. Widdows, Architect.

Bradford Schools.

Another of the plans on view is of a school for the Bradford Education Committee. The same general principles laid down in the previous schools have been aimed at.

The verandah in this case has been superseded by a corridor, which is well ventilated. Owing to the exposed position of the school on a hill side, a verandah would have been impracticable. Through ventilation to each classroom is obtained directly into the open air over the corridor.

The infants' conveniences in this school are placed near the main building, and are approached by a covered way. The separate door leading from the babies' room on to the south playground has the advantage of inducing the teacher to take the children out into the open air whenever the weather is favourable. A separate entrance and cloak-room is provided for the babies.

From a consideration of the foregoing plans it will be evident that the principles governing school planning as laid down by the Board of Education have been maintained, and yet an attempt has been made to provide schools more consistent with the modern principles of hygiene, as from exhaustive tests which have been made to ascertain the amount of CO_2 in the atmosphere of classrooms in such buildings as these as compared with central hall schools has shown the former to be infinitely superior to the central hall type, even where mechanical systems are in use. Such schools as these are both hygienically and from an educational point of view better, as the improved physique of the children is such as to enable them to benefit more from the instruction given.

As a further development of these principles, a school might be designed with a large portion of the south side of the classroom made to open by casement doors to the floor level, so that they can be thrown open when the weather is suitable, and the class conducted practically in the open air. The doors might be protected by a projecting hood or low verandah, to keep off the rain.

In such schools children can be taught to love fresh air as nature intended they should, instead of their being compelled to sit in rooms with closed doors and windows, breathing impure air many times fouled.

Bathing in Elementary Schools.

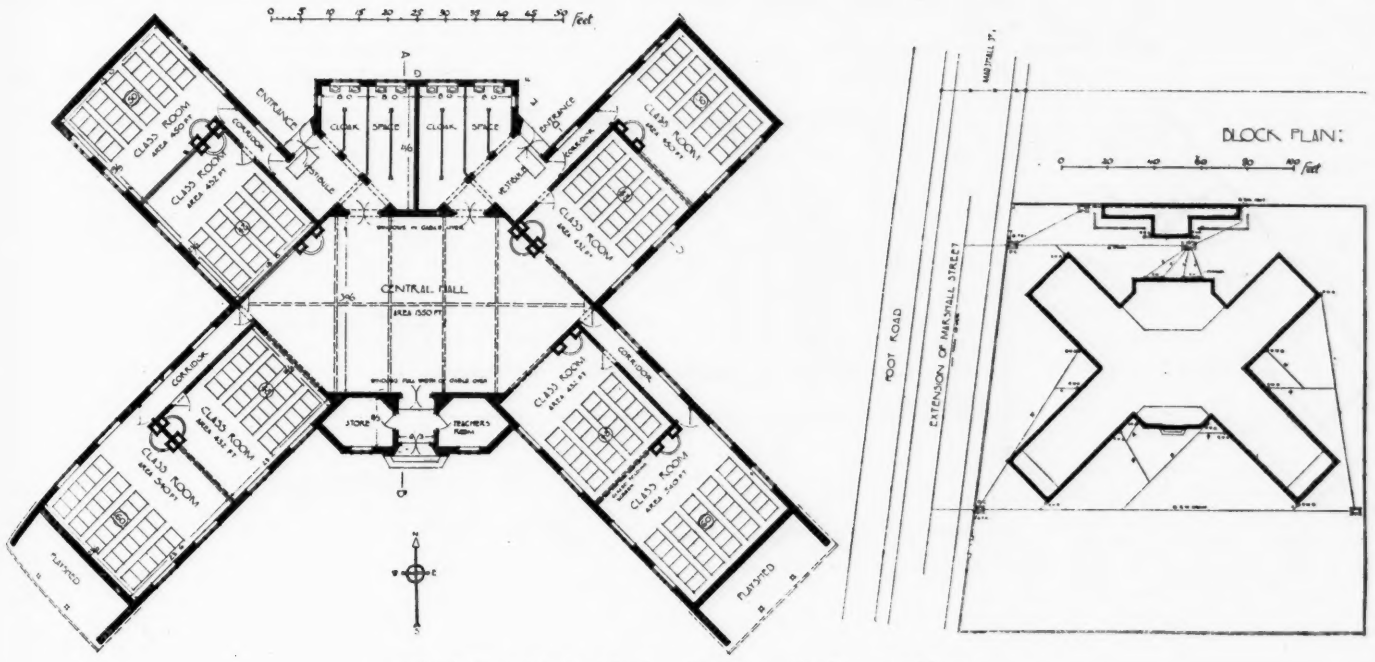
Instruction on bodily cleanliness should be given in elementary schools, and this can best be demonstrated by building spray baths in the schools themselves, and allowing the instruction to form part of the curriculum. Cleanliness is by no means a natural virtue. It has to be taught, and the ideas so learnt at school will go a long way to the making of more healthy men and women.

A great deal can be done by providing a dozen spray baths to each school. In Germany I noticed that all the new schools are being fitted with baths, which are proving a great national acquisition, and may partly account for the fact that dirty children are more rarely seen in the streets, in striking contrast to what may be so often observed in our own country.

An excellent work in this respect has been carried on in Bradford for some years past, and great credit is due to the Education and Baths Committees for their progressive work in this respect, as the benefits derived therefrom are incalculable.

Some of the schools are provided with spray baths, and others with swimming baths.

In the districts of the older schools, which were erected before baths were thought of, the Baths Committee are erecting slipper baths, more for the use of the poorer public, but which, however, can also be used for the children from the schools near at hand.

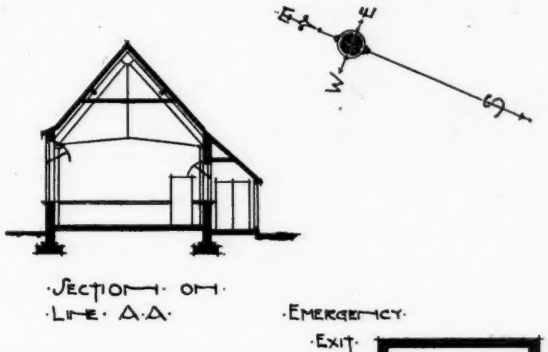


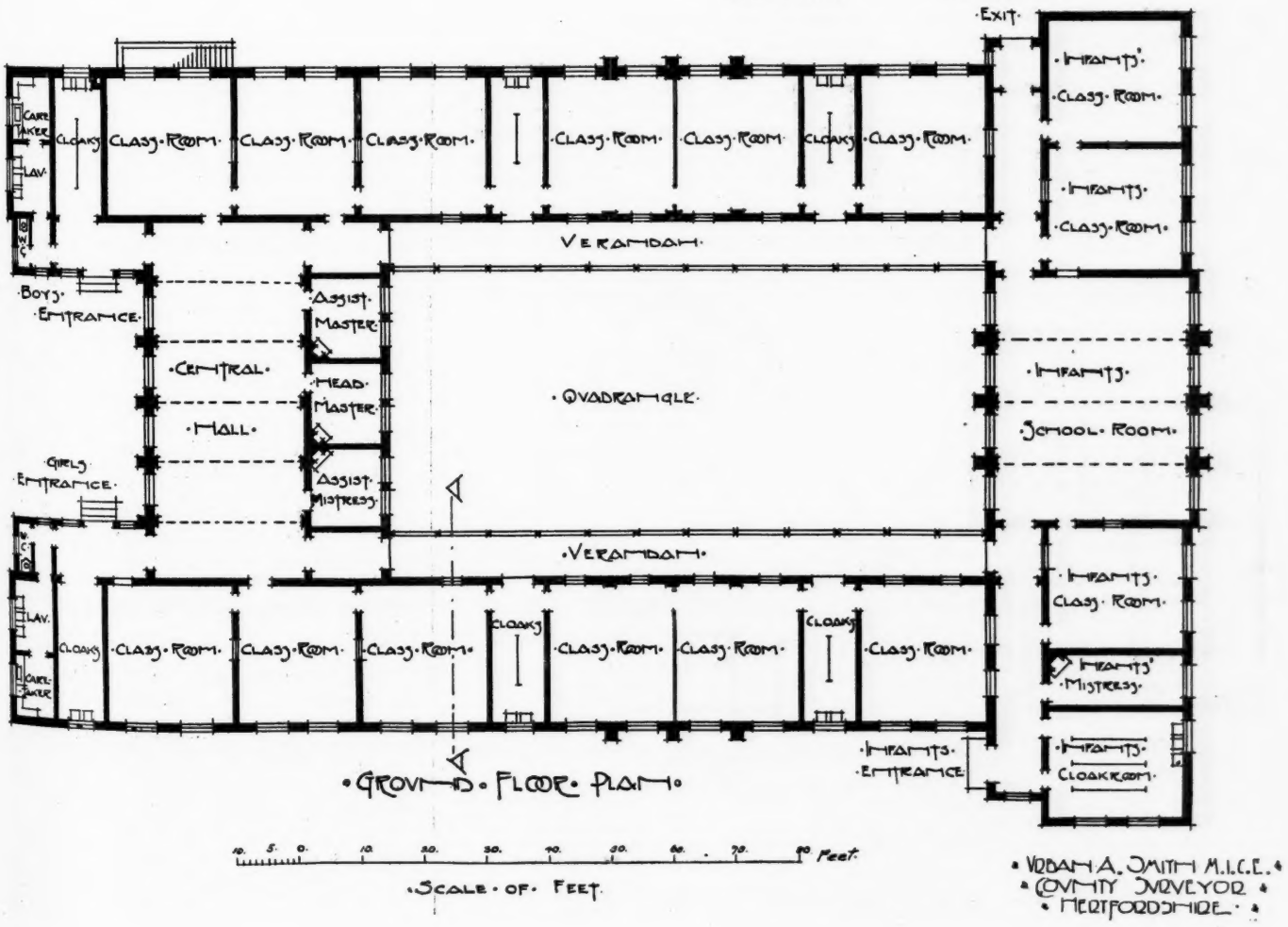
Derbyshire Infants' School. Mr. P. B. Houfton, Architect.

Spray baths appear to be the best, which allow the water to run away without collecting in a trough, so that there is less fear of contagion from any disease. A trough may be useful only in case of infants to allow them to paddle in the water, especially where the shock of the spray may be too great. The bath, however, can be so arranged as to be used as a trough, and yet the water allowed to run away when used by older scholars. The walls should be lined with glazed brick or tiles, and well lighted and ventilated, and everywhere the suggestion of cleanliness should be prevalent. Separate dressing-boxes are desirable for the older scholars.

The sprays should be arranged with a thermometer controlling valve easily

HERTFORDSHIRE COUNTY COUNCIL
ELEMENTARY SCHOOL
LETCHWORTH.

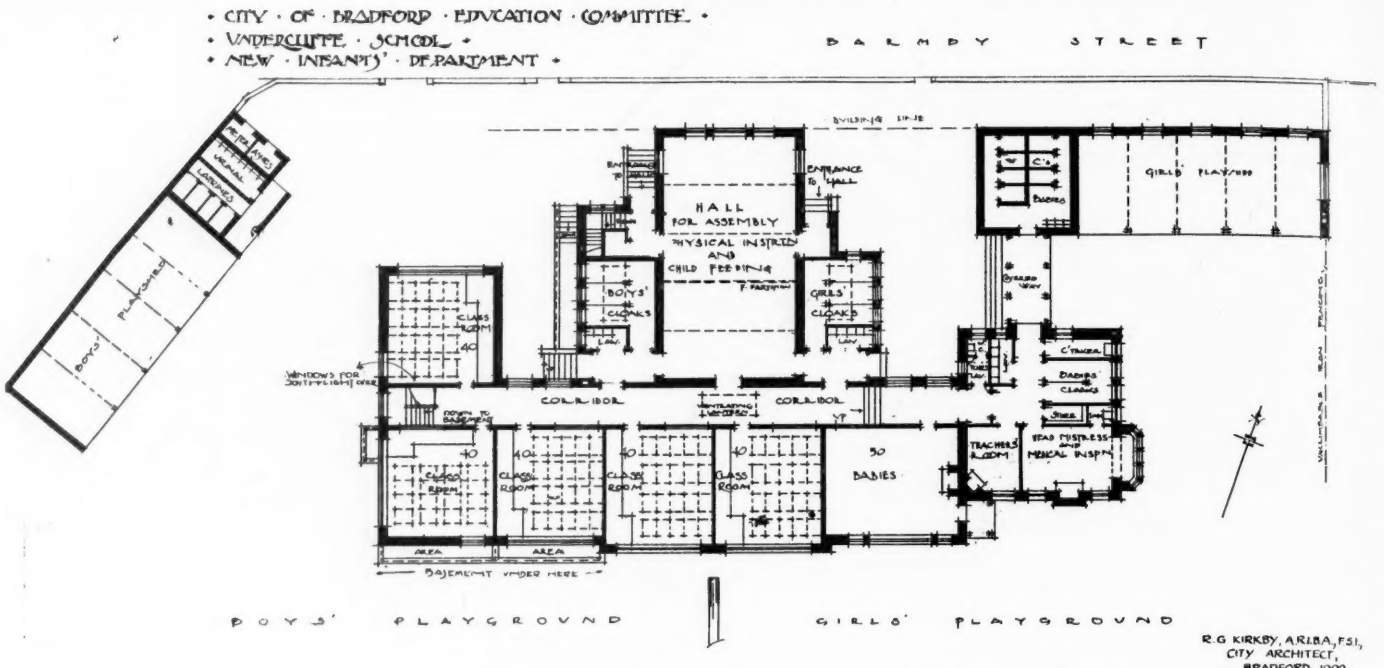




GROUND FLOOR PLAN.

SCALE OF FEET.

VERNAM A. SMITH M.I.C.E.
COUNTY SURVEYOR
HERTFORDSHIRE.



adjustable by the teacher. The children should be bathed at drill, all being made to wash one arm at one time, and again the head, and then the children might be made to scrub the back of those in front of them, and so on, the shower being brought into effect between each soaping drill.

A separate slipper bath may be included to allow of the bathing of the smallest children.

Cleanliness should become a national virtue, and, as previously stated, this can best be inculcated through the medium of school baths. Ideas of cleanliness learnt at school will be carried into the homes, and must have a far-reaching effect upon the rising generation.

Open Air Schools.

The experiments which have been so successfully conducted in Germany and in this country in providing open air schools for backward children and those who are physically debilitated have resulted in many cases in the children being passed back into the ordinary elementary school in a much improved state of health. Great benefit has been derived from the treatment, and many children have been saved from relegation into mentally defective schools through this means. The treatment provides baths, meals, and a few hours' daily instruction in the open air, with long periods of rest, all under medical supervision.

The London County Council opened a similar school during the summer of 1907, and a like experiment was made by the City of Bradford Education Committee last year, the results of which have been so beneficial that a new school of a more permanent character, accommodating 120 scholars, is now in course of construction at Thackley, about two miles from Bradford, and within ten minutes from a tramway stage.

The wood and iron building in which the experiment was conducted is being remodelled to provide a dining-hall and kitchen and offices for the new school buildings which are contained in two blocks to the east and west; the arrangement of placing the buildings against the north boundary wall has been governed by the peculiar conditions of the site.

These buildings comprise six classrooms, providing a floor area of 20 ft. per scholar, with a teaching verandah adjoining each classroom to induce the teacher to give out-door instruction on all possible occasions.

The classrooms are fitted with opening hoppers and fanlights on both sides. Ample lavatory accommodation contains a separate space for towels and toothbrushes for each child. The douche baths will allow each scholar to have a bath three times a week if necessary. Separate dressing-boxes are provided, also three separate self-contained douches for the larger girls, and one slipper bath for the infants. There are also large resting-sheds to enable the children to lie out at full length before and after meals.

In the warmer weather the teaching is conducted in the adjoining wood. Owing to the exposed position of the site, a connecting verandah is provided, running the full length of the building, and linking up all the buildings, so as to provide a means of communication during wet weather.

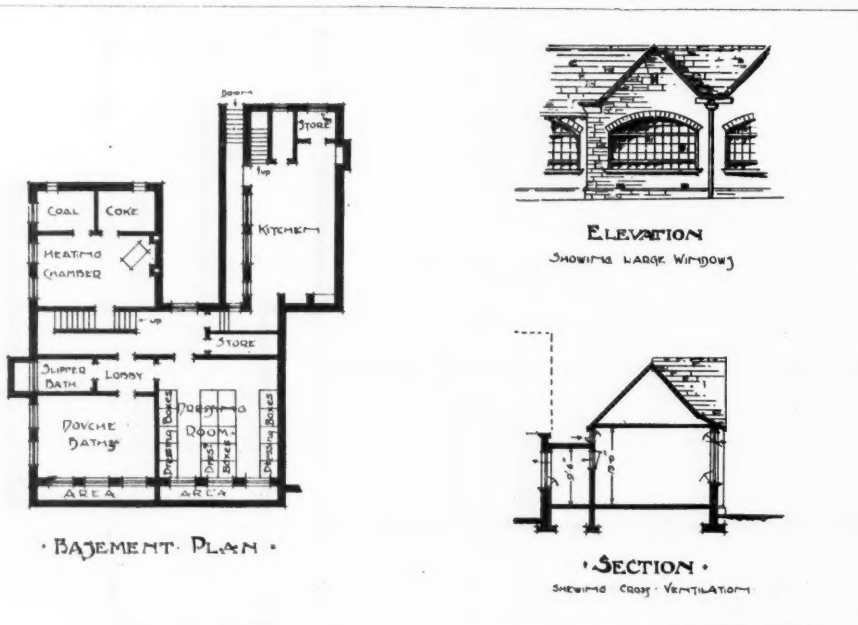
In one of the most successful German schools at Munchen-Gladbach the buildings are isolated, and a separate portion of the grounds is screened off for sun-baths. The school is situated in a pine wood, about an hour from the town, whilst the general arrangements appear to be suitable to the district. I do not think that the disposition of the buildings would, however, be suitable for most English towns.

From the great physical benefits and education results which have accrued from these open-air schools wonders have been worked upon the children in the increase of mental attention and alertness. Many of them have been given a new lease of life. I am convinced that the time is not far distant when there will be many similar buildings erected up and down the land, and not only will their usefulness be confined to such special buildings, but the principles carried out in the schools will in the future revolutionise the planning of elementary schools. In the meantime we should plan and build our schools so as to provide them with plenty of fresh air, and make them as healthy as possible, and to instil into the minds of the children such ideas as will promote the health and strength of the race.

It would be quite impossible to deal with all the details of an elementary school in the space of so short a paper as this, but we may consider a few of the more important points which naturally arise in the discussion of this subject.

Sites.

Committees do not, as a rule, attach sufficient importance to the selection of a site for a new school. Many a good building has been ruined by its site. In this, as in all other details, the best advice is necessary. There are so many questions—such as aspect, surrounding buildings, noisy streets, etc., which affect a site that it is imperative to give this matter every consideration. Because a piece of land can be had for a small sum of money it is not to say that it is cheap



Undercliffe School, Bradford: New Infants' Department.

Classrooms.

Ten square feet of floor area should not be taken as a maximum for elementary schools; 12 ft. will be found to give more efficient results in many instances. The floor area should be graded to suit the different ages of the scholars. It seems absurd that what will suit a child of six years will be equally suitable for a child of twelve.

Classrooms should not accommodate more than forty scholars, preferably less, as this number is the maximum which a teacher should be expected to teach with an expectation of anything like accurate results accruing therefrom.

Heating and Lighting.

The lighting of through ventilated classrooms naturally provides more light than is the case with those lighted only from the left hand.

The shadows usually cast by heavy mullions between the windows can be dispensed with if one large window is adopted. This not only provides additional ventilation, but gives a much more cheerful appearance to the room. By this means a ratio of a third to a quarter of window to floor area can easily be obtained. Such windows, however, need not detract in any way from the design of the building, but can be made a pleasing feature, and give the suggestion of space and freedom, and fully express the purpose for which the building is intended.

The increased amount of window space and openings naturally requires a considerable increase of heating surface, but it is surprising how accustomed the children become to fresh air, and how much less sensitive they are to cold when the air is constantly changed. The low-pressure hot-water system appears to be most suitable. It requires less attention than most other systems. Whilst the increased heating surface naturally increases the cost, yet a considerable saving can be made by the abolition of so-called roof extracting ventilators, which are more often ventilators in name merely and not in reality.

Ventilation.

On this question I have little to add to the remarks I made in the paper which I had the honour of reading last year before the Royal Sanitary Institute.

In schools similar to the ones I have illustrated, one need not trouble about their ventilation. All that is necessary is the requisite intelligence on the part of the teacher to regulate the openings, and the schools will ventilate themselves.

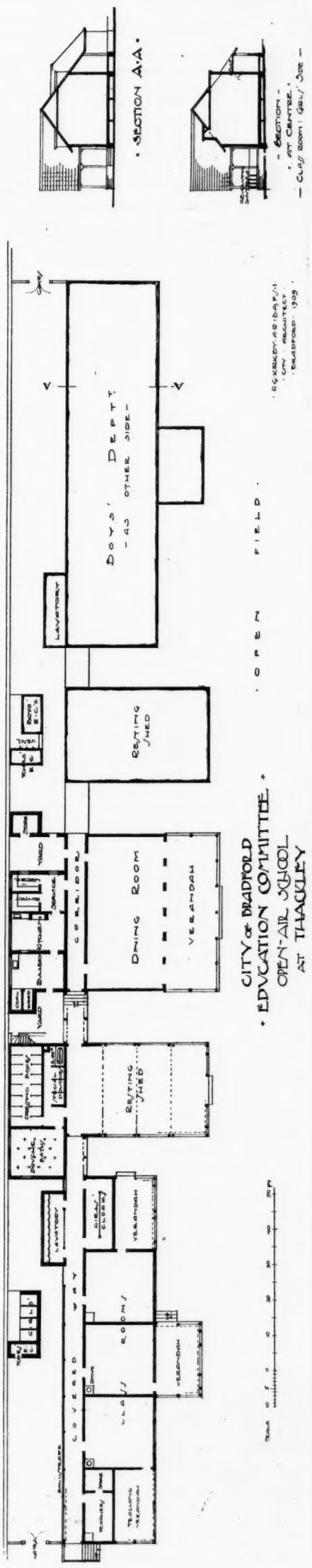
I am of the opinion that central hall schools, as they are now designed, cannot be efficiently ventilated except by mechanical means. In mechanically-ventilated schools the children acquire wrong ideas, which are totally contrary to the teachings of nature, and they are sure to carry them into home life in later years, with undoubted evil results.

To gain anything like a satisfactory system of mechanical ventilation, the cost of the school is increased from 30s. to 2*l.* per scholar. It seems wrong to have to pay so much to teach the children principles which are attended with evil results in after life.

Cloakrooms, etc.

The usual hanging space of 6 in. per scholar for cloakroom accommodation is not sufficient, particularly in the case of girls, whose hats are often 15 in. across the brim. Cloakrooms cannot be too well ventilated and lighted. Top lighting is a decided acquisition. These rooms should be heated to dry the cloaks in wet weather. Lavatories should not be placed in the cloakrooms.

Child feeding appears to have now become a necessity in most of the larger towns. The acute poverty which has followed in the train of recent depressions has driven home the fact that it is waste of time and money to attempt to teach half-fed children. If this is carried out at the schools it necessitates either small cooking centres at each school in the poorer districts or one large centre, with specially constructed delivering-vans to keep the food warm.



Next to the hygienic arrangements of a school, its decoration should have some consideration, with a view to developing the artistic sensibilities of the child. Whilst in many schools pictures are provided to hide the bare walls, yet there is scope for the introduction of a little decoration in the form of friezes or panels in some simple form, which would help to create a taste for art whilst the mind is plastic and capable of receiving such impressions.

Elementary schools should, as far as possible, be of single story, and, if necessary, more of them, rather than herding together children in large buildings like so many flocks of sheep.

Whilst emphasising the fact that a new era in school planning has really commenced, it must at the same time be admitted that the forms in which the newer principles are to find ultimate expression are not yet by any means settled. But while these may for some time yet properly form the subject of discussion authorities and architects should not hesitate, as far as is deemed prudent, to translate some of the newer and commendable perceptions of rational planning and construction into the buildings which they are called upon in the near future to erect.

Architects who will, when necessary, recommend authorities to build such newer type schools, and the authorities who will act upon such advice, should do so readily, notwithstanding the fact that in some cases a somewhat larger initial outlay may be involved, because, even where this may be the experience, it will soon be realised that the compensating advantages, not only to teachers and scholars, but also the enhanced educational product, will far outweigh the other and merely temporary considerations.

The quick return in the increased physical and educational attainments of scholars trained in such improved schools will speedily justify the principles which have actuated architects and authorities alike in providing them.

And the justification will not be one redounding upon architects and authorities alone, but will also, I am convinced, meet a wide approval by the nation at large, as the outcome of a rational appreciation of the truest principles and a sane application of such principles to the service of the highest and best needs of the nation and the race. For what can be supremer folly than to neglect our racial units in the earlier stages of their development, only to be burdened with them at a later stage in life as physically stunted and mentally dwarfed inmates of asylum, hospital, or workhouse? . . . Quite apart from the resulting all-round fitness which may tend to an even greater commercial expansion than our country has hitherto achieved, the carrying out of the building reforms indicated, coupled with concurrent improvements in the training, will of a certainty insure in succeeding generations such a great national increment of physical gain, intellectual development, and domestic happiness as will make us in the eyes of the world at large a truly noble race.

I am indebted to the following for the loan of their plans, *i.e.*, Messrs. J. Hutchings, A.R.I.B.A., Geo. H. Widdows, A.R.I.B.A., Urban A. Smith, and Percy Houfton."

THE BUILDER

AUGUST 21, 1909.

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NOTES FROM FRANCE.

It is proposed to form, at Paris, a "Musée Lapidaire" to contain whatever old stones are found which have any historic interest. It will be a kind of annexe of the Hôtel Carnavalet, and will be arranged in the old Convent of the Bernardins in Rue de Poissy. To it will be transported all the old stones and bits of carving which now encumber the galleries and the garden of the Hôtel Carnavalet, as well as all vestiges of the past which the Vieux Paris Committee may be able to save from the hands of the workmen engaged in demolitions.

The Municipal Council of Paris have passed a vote for a building intended for various Art exhibitions, to be erected on a site to be chosen by the Council in conjunction with the Government. Some of the members of the Council wish to have the building erected on a site on the old fortifications, between the Porte Maillot and the Porte Dauphine. Another proposal is that, after the removal of the Galerie des Machines, two buildings should be erected at opposite ends of the site, connected by a subterranean gallery, and leaving the façade of the Ecole Militaire to show between them.

M. Rodin has completed the model for the proposed monument to Puvis de Chavannes, to be erected by public subscription. Various sites have been proposed or offered, but it is most probable that the monument will be erected on the Cours la Reine, between the Pont de l'Alma and the Pont des Invalides.

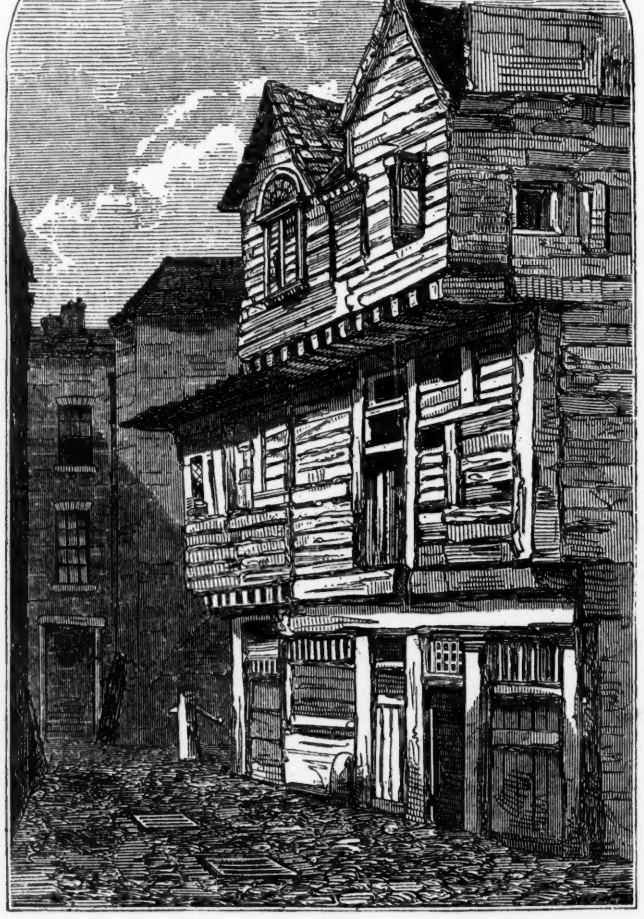
A monument is shortly to be erected in the principal square of Nogent-sur-Seine, to the memory of Paul Dubois, the eminent sculptor. It is the work of M. Alfred Boucher, and consists of a bust of Dubois accompanied by two female figures representing Sculpture and Painting.

M. Paul Gasq has executed the sculptural decoration for a large clock on the front of the new Post-Office building at Dijon. The composition includes a figure of a man, representing Day, and driving a car drawn by two horses. On the left is a figure of a woman, representing Night. Between these two groups is the clock face.

Among the schemes now before the Department of Public Works for the safeguarding of Mont St. Michel, is a proposal for the erection of a bridge, 1,500 mètres in length, for access to the Mount, in place of the dyke, which would be removed and thus permit the sea to encircle it freely, without the check imposed at present by the dyke.

Fifty Years Ago.

FROM THE *Builder* OF AUGUST 20, 1859.



Ashlin's-place, Drury-lane: A London Dairy, 1859.

THE upper part of this structure is now ruinous, and it is not long since it was inhabited. All round it the houses are thickly populated, and many in passing will wonder at a place seemingly useless being allowed to remain. A more close inspection will, however, show that, hidden and hoarded up, there are here, in the lower apartments, in darkness visible, from thirty to forty cows, which supply a large number of families with milk. Anything worse than this arrangement cannot be imagined.

Illustrations.

BURSLEM MUNICIPAL BUILDINGS.

THE building is planned with its principal façade to Wedgewood-place, and is divided into three main divisions, the large concert-hall being placed in the centre, with the Assembly Hall and the Law Courts on either side.

Owing to the nature of the site the latter are placed at a lower level, immediately opposite the police-station.

An open space divides this part of the building from the post-office adjoining, giving ample room to accommodate the inevitable crowd which congregate at the court entrance, with no obstruction to the public thoroughfare.

S. B. RUSSELL AND T. EDWIN COOPER.

SKETCHES WITH THE ARCHITECTURAL ASSOCIATION EXCURSION.

WE give this week additional sketches made in connexion with the Architectural Association Excursion. The second and concluding portion of our report appears on another page of this issue.

THE ORDER OF THE MAUSOLEUM AT HALICARNASSUS.

THIS illustration of the Order of the Mausoleum at Halicarnassus, as now set up in the British Museum, is reproduced from some fine measured drawings to a very large scale, made some time since by students of the Royal College of Art, under Professor Pite's direction.

It is given in this issue partly in reference to the fact that in the "Reviews of Books" Supplement of this week there is a notice of the late J. J. Stevenson's monograph on the restoration of the Mausoleum. The drawing does not, however, bear on any of the disputed and disputable points as to the restoration; of the Order we are at all events certain; what is uncertain is what it stood on and what came above it; and any light which the remains in the British Museum throw upon this question depends on some lesser details—the sizes and proportions of some of the steps found, for instance—which at all events suggest features that never came into the older attempts at restoration previous to Sir Charles Newton's discoveries on the site of the Mausoleum.

ST. JOHN'S HOSPITAL, HEYTESBURY.

THE old and once market town of Heytesbury, situated on the borders of Salisbury Plain, four miles from Warminster, possesses in St. John's Hospital a very interesting charity. The original almshouse was founded by Letters Patent 11 Edward IV. (1472), and endowed by Margaret Lady Hungerford and Bottreux, and her son Walter, with lands at Cheverell, Clinton, etc., in the county of Wilts. The original structure remained standing till 1769, when it was burned down in a great fire that consumed practically the whole of the town. The present hospital, quadrangular in plan, is a pure Georgian building throughout, with the exception of the cellars, which are all that remain of the original edifice. It is probably the largest quadrangular almshouse of Georgian date in the country. The building is approached from the road by steps, whence a grass-bordered walk leads to the main entrance. The building, although rather too much covered with foliage to please the architect, is exceedingly picturesque, whether viewed from the road or from the quadrangular court; the unambitious and restful nature of the architecture conveying a subtle air of peace and quietude befitting a harbour of refuge for the aged poor.

The charity provides for twelve poor men and one woman, who dwell together in a kind of collegiate way. At the head of the establishment is a *custos* who must always be in Holy orders, as the founders originally stipulated.

SIDNEY HEATH.

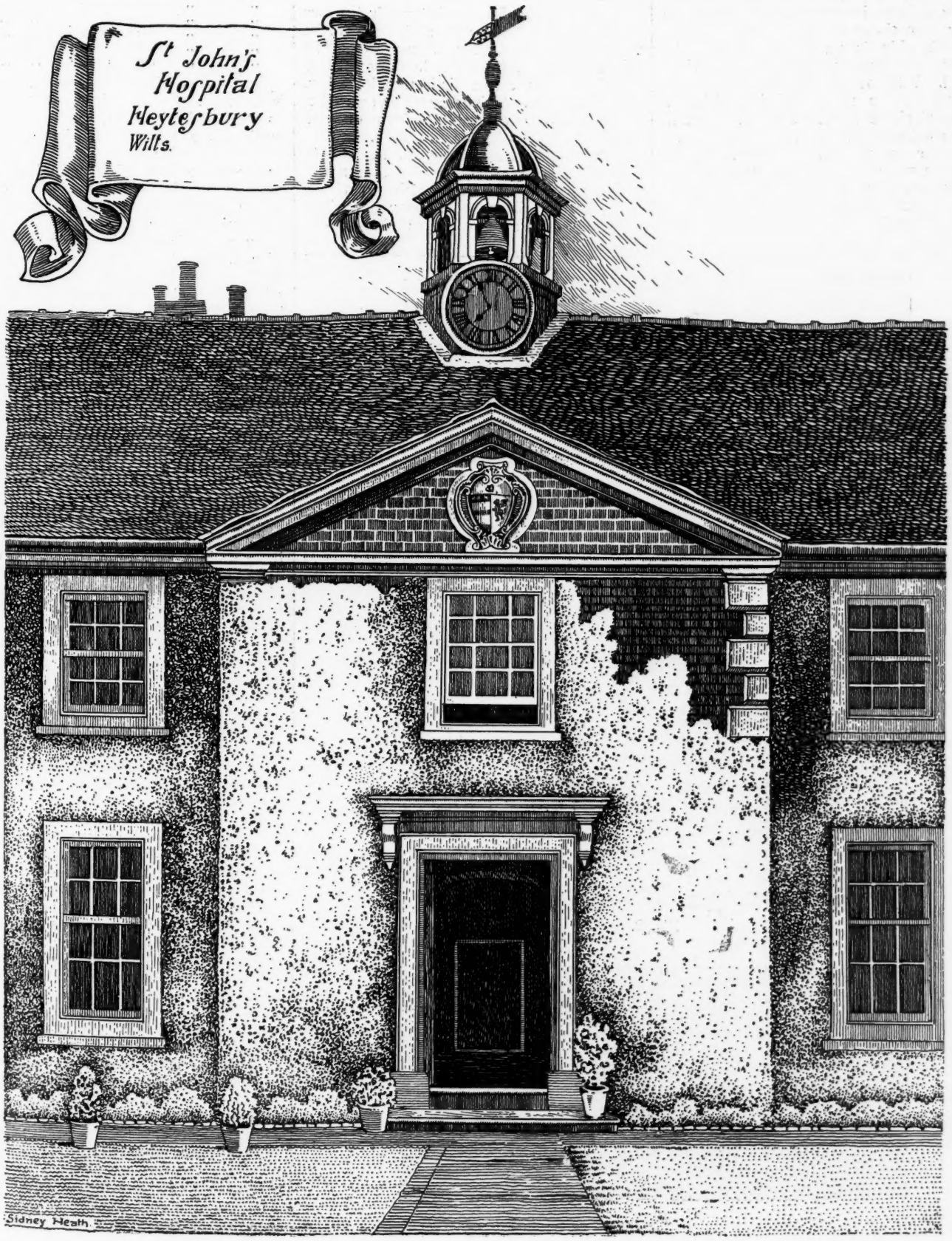
BOOK RECEIVED.

DOMESTIC SANITARY ENGINEERING AND PLUMBING. By F. W. Raynes, R.P. Pp. 474. (London: Longmans, Green, & Co. 1909. 10s. 6d. net. With 277 illustrations.)

RUST AND DEFECTIVE WELDS IN IRON AND STEEL.

IN a paper recently read before the Iron and Steel Institute of Staffordshire, Mr. Thornton Murray, B.Sc., made reference to a number of structures in which the defects of iron and steel had assumed serious importance. In the roof of Charing Cross Railway Station, for instance, many of the members were in 1906 found to be little more than half the thickness that they were when originally erected some forty-five years ago. In the Forth Bridge an inspection has shown that many of the bolts have entirely lost their seating through corrosion. In the steel frame structures of New York periodical minute inspections are made for signs of rust.

After making reference to the many investigations to ascertain the cause of rusting when pure materials are employed (see the *Builder*, July and August, 1908), he



says, "besides the electrolytic action set up between clean iron and rust, a very much more serious action is set up when clean iron and black oxide of iron, or "smithy scales," are placed in contact in an electrolyte. In this case the iron serves as the anode or positive pole, while the oxide acts as cathode. Mr. E. F. Law, A.R.S.M., conducted experiments on welded bars, and found that rusting took place much more rapidly at the weld than elsewhere, and this he attributed to the presence of magnetic oxide of iron ("smithy scale") at that point. He considers that this peculiarity was largely the cause of the failure of one of the tie rods of the roof of Charing Cross Station.

The action upon iron and steel of other metals, with respect to corrosion, is yet another proof of the existence of some kind of electrolytic action. Zinc is the only commercial metal (except manganese) which is electropositive to iron, and which, therefore, when dissolved away, will tend to redeposit upon the iron. Of course, cast iron with the skin on is a very much better rust resister than either of the others. If, however, this skin is removed, the material becomes rather less durable than wrought iron or steel. With regard to the effect upon corrosion of the recognised impurities in iron and steel, we may note that sulphur in iron or steel generally tends to promote, and phosphorus to reduce, corrosion. Silicon seems to render wrought iron and steel less liable to corrosion, both by acids and by air and moisture. Added to cast iron, in the foundry, it would probably have a deleterious effect, since the small proportion there added only succeeds in making the iron grey—and grey iron has been generally found to be more easily attacked than the white variety.

The Bower-Barff process forms a film which was brittle, could not be made altogether adhesive (so that the slightest shock was sufficient to "scale" it off), and once broken through was an active agent in promoting the destruction of the metal it had protected. A process which is mainly applied to similar work has lately been patented, and in Mr. Murray's opinion is apparently destined to be very largely used. The iron or steel to be treated is immersed in a hot phosphorised solution, in which are some iron filings. The surface of the iron or steel is transformed into ferrous and ferric phosphate, and presents a pleasing dull black appearance, besides being wonderfully resistant to corrosion. This process is being applied to many light engineering products, gun-barrels and gun-locks, spanners, springs, cycle-tubes, and the like.

Referring to the loss of substance in the case of the Charing Cross roof, stated above, for specific members, by Mr. Murray, it may be useful to mention the estimate of the average loss given by the late Sir Benjamin Baker, viz., 6 per cent. This estimate and mention of the defective weld are to be found on page 37 of the *Builder*, January 13, 1906.

The investigations of Mr. E. F. Law (a Carnegie Research Scholar of the Iron and Steel Institute, and for which report he received their Silver Medal) upon impurities in steel may be summarised as follows:—

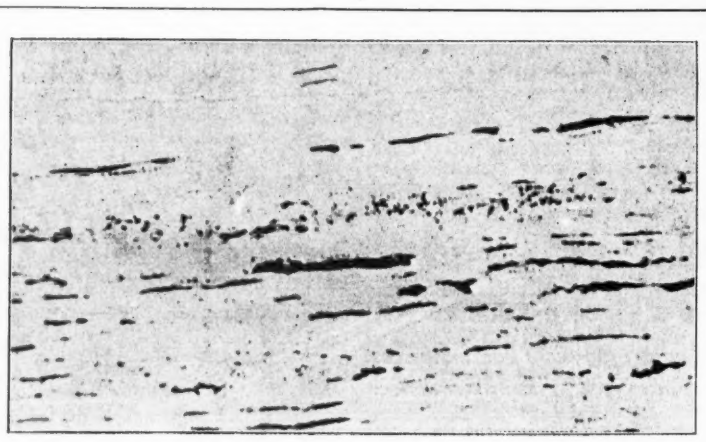


Fig. 1.

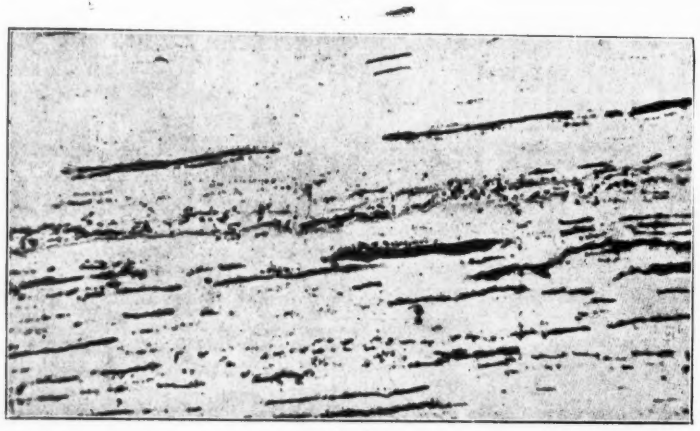


Fig. 2.

Fig. 3.

Oxide of iron differs in one respect from all the other impurities found in steel, and the results of this difference are of far-reaching importance. The difference referred to is the influence exerted by the impurities on the corrosion of steel. The difference is very noticeable when dealing with the polished specimens for microscopical examination, or even with freshly-filed surfaces.

If these are kept side by side in an ordinary room, it will be seen that the steels containing oxide begin to show signs of rusting long before the others, and in dilute acid solutions they corrode far more readily. The explanation of this behaviour is that all the impurities, with the exception of oxide, are electro-negative as compared with iron, and the result is that a small electro-motive force is set up, which assists the *solution of the impurity*, thus leaving pits in the steel.

Approximately, this electro-motive force is as follows:—

		Volts.
Between iron and basic slag		0·018
" "	manganese sulphide ..	0·015
" "	iron sulphide	0·015
" "	iron phosphide	0·013
" "	manganese silicate ..	0·006
" "	ferrous silicate	0·006

In the case of oxide, however, the action is reversed. Oxide of iron is electropositive as compared with iron, so that the electro-motive force causes the *steel* in the neighbourhood of the oxide to be dissolved. Moreover, as the oxide is not itself dissolved there is nothing to hinder the continuance of the action until the oxide is removed by mechanical means.

An example of this action is shown in Figs. 1, 2 and 3, illustrating the corrosion of a piece of welded iron. A perfect weld is seldom met with, and there is nearly always (especially in large welds) a considerable amount of oxide which is never squeezed out from between the two surfaces, but remains in the form of small globules, as shown in Fig. 1. Fig 2 is the same, after etching lightly with dilute sulphuric acid, and the difference in the extent of the corrosion can be seen by the rather ill-defined line surrounding the steel containing the oxide. Fig. 3 is the same sample more deeply etched, and under a lower magnification, showing a distinct groove cut by the acid along the line of the weld. (Figs. 1, 2, and 3.)

To prove that this action takes place on a large scale a number of welded bars were obtained of various sizes up to 2¼ in. in diameter. Some of these were subjected to corrosion as they were, and others were sawn in half from end to end and then corroded. The exaggerated corrosion at the weld was well marked, more especially in the larger bars.

A very serious example of this corrosion occurred in the collapse of the Charing Cross Station roof, due to the breaking of a tie-rod. The fracture, Fig. 4, showed an imperfect weld, which had, nevertheless, been strong enough to withstand the stress of storm and weather for over forty years, until the slow corrosion of the gases from burning coal finally brought it down.

*In this Fig. 4 the light portions are, of course, the sound, whilst the dark portions are the imperfectly welded area in the cross section of the tie-bar.

These are cases in which the oxide may be said to be introduced artificially, but the results are equally serious when the oxide is introduced in the process of manufacture. A constantly occurring example of this is to be found in the pitting of boiler plates and tubes. Mr. Law is of the opinion that the impurities in steel should not be regarded with indifference, and that silicates, and particularly oxides, deserve special attention. Chemical analysis reveals nothing as to the presence of silicate, and a number of samples whose failure was solely due to the presence of silicate were only detected by a microscopical examination. This latter test showed that it does not occur in isolated

* The illustrations are given by the kind permission of the Iron and Steel Institute.

patches, but distributed throughout the mass.

The apparent contradiction of these observations respecting the effect of silicates with those of Mr. Murray (*see* ante) respecting the effect of silicon is no doubt due to the fact that the latter refers to metallic silicon

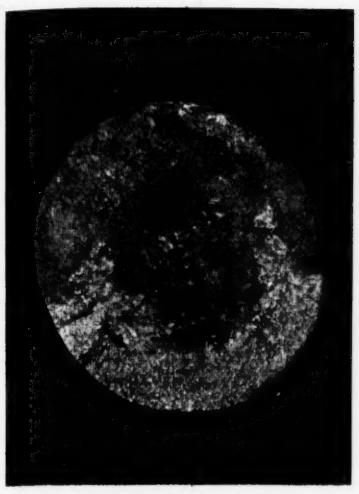


Fig. 4.

or silicide of iron; whilst Mr. Law refers to manganese and ferrous silicates, both of which compounds contain oxygen, making them in some degree analogous to the oxide of iron which he specially characterises as injurious.

The compiler of this note has recently observed marked corrosion in the lattice bars of the Lambeth suspension bridge. This complete severance thereof, just above the level of the roadway, in several instances is evident to any person passing over the bridge, and would appear to be worthy the attention of the controlling authority.

There has been brought to the compiler's notice recently a case where the top flange of the uppermost row of lattice girders of the guide framing of a gasholder situated on the south coast, although carefully painted each year, has become wasted in seven to eight years sufficient to require its renewal. As the gasholder generally has not suffered to any serious extent the difference offers a problem for further inquiry, in the light of the principles that have been set forth in the foregoing and preceding articles.

With reference to the deficiencies of the Bower-Barff process, mentioned above by Mr. Murray, it is worth recording that after a number of years' experience upon a large scale two at least of the London gas companies are continuing to employ that process for their cooking-stoves and gas-fires. The success of the method depends largely upon the perfect cleansing of the iron or steel from all dirt, and especially grease, before admission to the superheated steam-chamber.

THE LONDON MASTER BUILDERS' ASSOCIATION:

VISIT OF BELGIAN BUILDERS.

ARISING out of a visit to Belgium last year of the Sheffield Master Builders' Association, a large party of Belgian builders, representing the Associations of Antwerp, Brussels, and Ghent, have visited this country; and in Sheffield, Liverpool, and London they have been received by representatives of the Associations belonging to the National Federation of Master Builders. The tour was brought to a conclusion on Friday and Saturday last, when visits were made to the buildings, etc., of London. On Thursday, the 12th, the party, including ladies, arrived in London from Sheffield, when the London Master Builders' Association entertained to dinner at St. Ermin's Hotel, Westminster, the representatives of the above-named Belgian Associations, Mr. F. G. Rice, President of the London Master Builders, presiding.

Among those present were:

MM. A. Hesbain, Vice President of Antwerp Association; A. Grangé, Secretary, ditto; F. Van Dyck, 2nd ditto; Van Deuren, President of the Brussels Association; Van Autryve, ditto, Ghent; Van Eckert, Antwerp; Van Bergen, ditto; Merckx-Verellen, President Conciliation Board; Dagry, Brussels; Bermrert; Vermeulen, Antwerp.

There were also present representing the Association:

Messrs. F. G. Rice, D. S. Rice, Arthur Brown, A. G. White, E. J. Brown (President of the National Federation), W. F. Wallis, Fredk. Higgs, G. Bird Godson, James S. Holliday, Leonard Horner, H. W. Horner, Joseph Randall, A. W. Turnbull, H. Knight, C. Wall, J. Chessum, Albert Monk, J. W. Jerram, E. A. Hough, G. H. Parker,

and others. The company numbered over 150, of whom over 100 were Belgian guests.

After dinner the toasts of "The King" and "His Majesty King Leopold" were proposed in French and suitably honoured, the National Anthem and the Belgian National Anthem being sung.

The President then explained that the visitors had first visited Liverpool, had then gone to Sheffield, and were now in London in order to meet their confrères and to see the sights.

He then proposed, in French, the toast of "Our Guests," and said that round the tables were gathered the builders of two different countries, although our lands are separated by the North Sea, yet our wishes and our aspirations are exactly the same. The visit had caused English builders great pleasure, and he hoped it had been the same to the visitors. He hoped to visit Belgium next year for the purpose of seeing the International Exhibition of Brussels, as doubtless many of his countrymen would do, and he felt sure the Exhibition would be a great success. In Belgium there were a great number of buildings which were excellent examples of good design and construction, and which could truly be called works of art, and he hoped that the visit to England had not disappointed them, and that they had thought some of our buildings, both ancient and modern, worthy of remark, for we as Englishmen were justly proud of them. We are all united in the desire of beautifying our different countries with fine buildings, but here in England we had not at present so often the opportunity of doing so as we should wish, as the state of the building trade was very depressed. He hoped it was not the same in Belgium, and that they might always have in their own country plenty of work to occupy their time and abilities.

M. Aimé Hesbain, Vice-President of the National Federation of the Master Builders of Belgium, and President of the Antwerp Association, who spoke in English, thanked the English builders, on behalf of the builders of Antwerp, Brussels, and Ghent, for the kind reception accorded to them. He was glad to know that the President thought of visiting the Exhibition at Brussels, and he hoped many other builders from England would do so. They were, as builders, touched to find the toast of their King honoured, for he was renowned in their country as a patron of all great works, and was called "the King of the Builders." The little Belgian nation had for centuries felt a warm sympathy with the great English nation. Individual and political liberty, and peaceful improvements, according to the progress of science, were characteristics of both nations, and such a meeting as that could not fail to promote the feeling of sympathy between—not only the two nations, but also between the builders of the two nations. Last year, they received in Antwerp and Brussels builders from Sheffield and Yorkshire, and from the first there had been this cordial feeling between them. The Sheffield builders asked them to come to England and they had accepted the kind invitation, and they greatly welcomed the friendship and kindness of their English friends there and in London. As to the Brussels Exhibition, as he had said, he hoped that many English builders would visit it. Brussels was also the cradle of the International Federation of Builders, in which there were now fourteen nations included.

M. J. Van Deuren, Vice-President of the Master Builders' Association at Brussels, whose remarks were interpreted by Mr. A. E. Brown, said he desired to associate himself with the remarks made by M. Hesbain. It was necessary for all contractors of every country to associate together. Twenty-five years of Association in Belgium had proved to Mr. Vandeuren the value of constant meetings for the purpose of discussing matters of interest to the trade; he was especially glad to hear that English builders were likely to visit them next year to see the Brussels Exhibition and the fine buildings and works of art referred to by the President, and he assured them they would receive a hearty welcome. We should adopt the motto, "One for all, and all for one," and agree to go hand in hand together.

M. J. Van Autryve, President of the Ghent Association, also spoke, in Flemish, and M. Hoffman interpreted his remarks. In the name of the Ghent builders M. Van Autryve thanked the London Master Builders' Association for their reception.

The health of the Chairman (Mr. Rice) having been drunk, and the Chairman having briefly replied, Mr. Frederick Higgs proposed the toast of "The Ladies" in eulogistic terms.

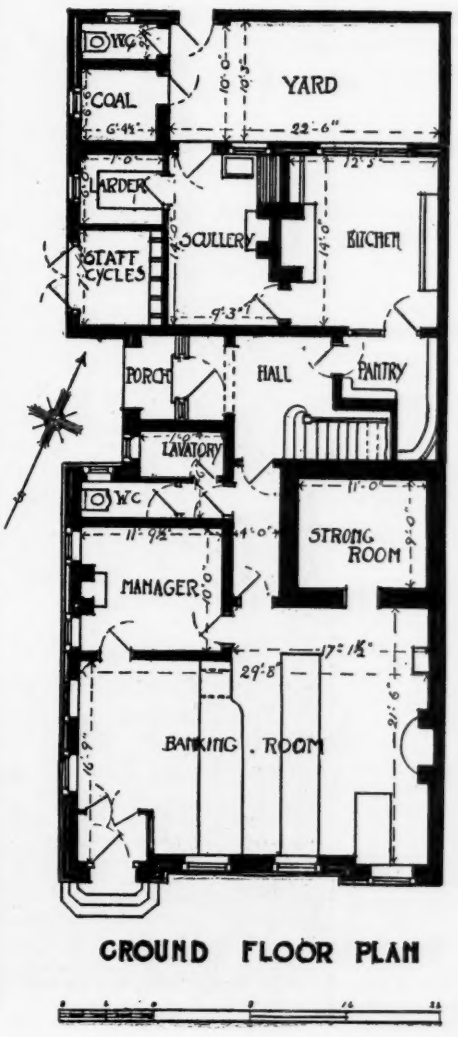
M. Hoffman replied on behalf of the Belgian ladies, and proposed the health of the English ladies.

Mr. Brown, President of the National Federation of Master Builders, suitably responded, and the proceedings terminated.

BANKING PREMISES, PARKSTONE, DORSET.

THIS building consists of offices for Messrs. Lloyds Bank, Ltd., and a house for the manager.

The street front is carried out in Doulting



GROUND FLOOR PLAN

stone, Fordingbridge red facings, and Reading rubbed bricks. The entrance lobby, banking hall, manager's room, desks and fittings are finished in unpolished teak, and the floors are of marble and doloment.

Mr. G. A. Bligh Livesay, of Bournemouth, was the architect; Messrs. Collins & Godfrey, of Tewkesbury, the builders.

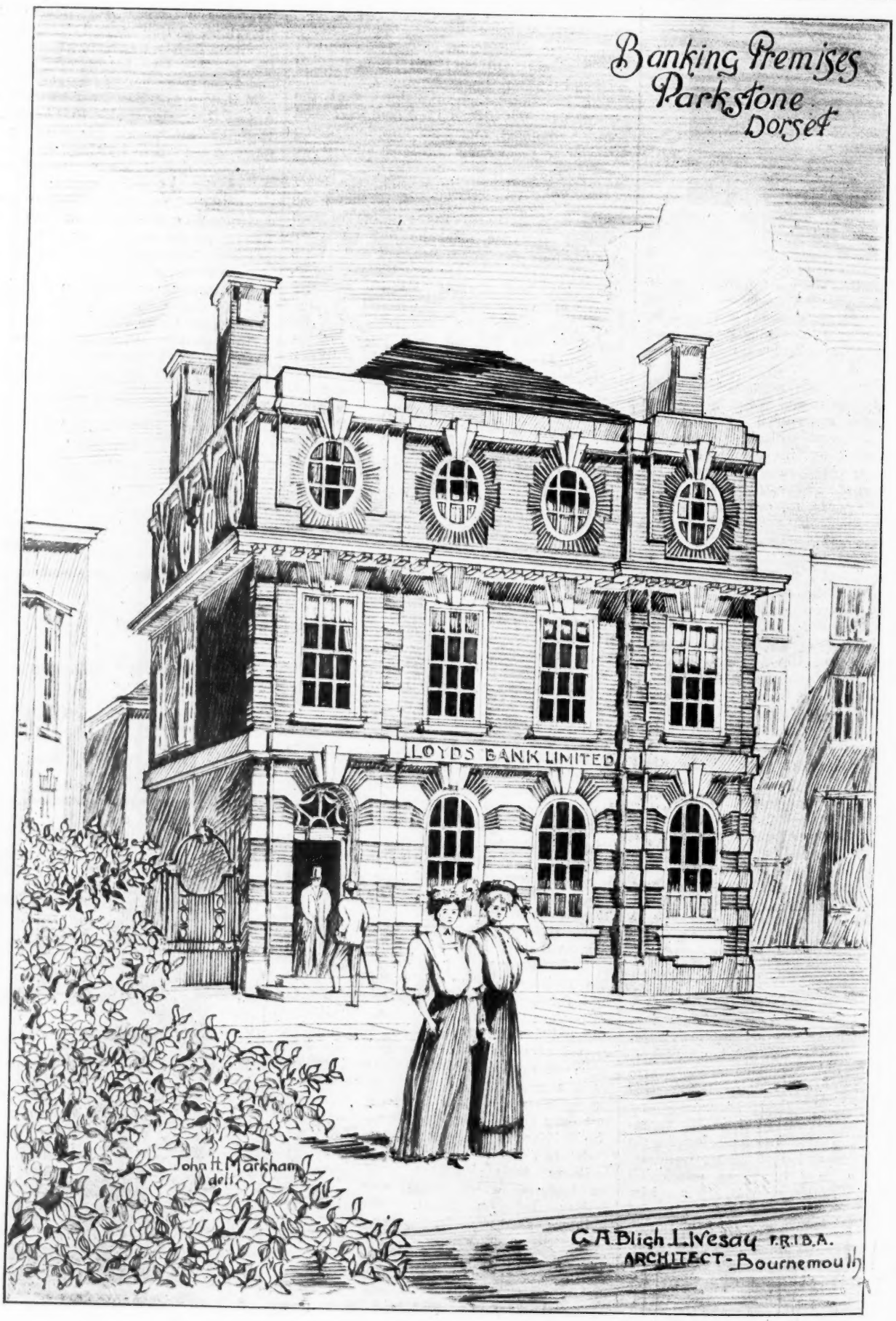
NATIONAL HOUSING REFORM COUNCIL:

NATIONAL TOWN PLANNING CONGRESS.

THE National Housing Reform Council held its annual Congress on August 4, 5, and 6, in the neighbourhood of Liverpool, though the town of Liverpool itself was not specially inspected. Alderman Thompson, Mayor of Richmond, was in the chair. The first day was passed at Port Sunlight, where the Congress was entertained by Mr. W. H. Lever, M.P., and in the evening a reception was held in the University of Liverpool, to which the delegates were invited by the New School of Civic Design. The second day was spent at Southport, where the Congress was entertained by the Town Council, and on the third day the villages of Woodlands and Earswick, in Yorkshire, were visited.

There were about 200 delegates present, including, besides representatives of the principal towns of Great Britain, delegates from France, Germany, Belgium, Holland, and America.

The immediate subject for discussion by the Congress was the Housing and Town Planning Bill at present before Parliament. A series of short but interesting papers were read at different times during the Congress by various delegates. Among the more interesting were those by M. Berlepsch von Valendas (Munich), Mr. Mawson (Windermere), Professor Adshead (Liverpool), Mr. T. C. Horsfall (Manchester), M. Augustin Rey (Paris), Mr. Raymond Unwin (Letchworth), and



Professor Eberstadt (Berlin). The last-mentioned paper by the distinguished Professor of Economics at Berlin University was perhaps the most important contribution to the subject which the Congress elicited,

The subject of town planning presents naturally two opposite standpoints from which it may be regarded, the architectural standpoint typified by the "civic centre" so much talked of in America, and the housing standpoint typified by the "backyard." In a congress of this nature, naturally the latter aspect was the one insisted on, but a rather pleasing change was given by Professor Reilly, who read a paper, illustrated by lantern-slides, at the reception held at the University on "Recent Proposals for Civic Art in America." Here economics and sociology were for the moment entirely forgotten, and the Congress were enabled to enjoy an excursion into the domains of pure architecture. To strike a mean between these two extremes, and to reconcile these almost opposed tendencies, seems to us the chief object of the new School of Civic Design founded by Mr. Lever at the University of Liverpool. The reception, which was presided over by the Lord Mayor, himself a member of the staff of the new school, included an address on the proposed work and scope of the school by Professor Adshead, and a description of the landscape gardening section by Mr. Mawson. There was an exhibition of civic and architectural designs by Professor Adshead, and members of the School of Architecture, and a collection of pamphlets and books on town planning brought back by Professor Reilly from America.

The whole Congress was most successfully organised and arranged by Mr. H. R. Aldridge, the Secretary to the Council.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

THE DURHAM MAIN SEWERAGE WORKS.

AT the first annual general meeting of this Institution, held at Durham on August 7, Mr. H. W. Taylor, A.M.Inst.C.E., etc., read a paper on "Durham Main Sewerage Works." After some preliminary remarks he said that, generally speaking, the town slopes steeply to the river, which is the natural outlet for the sewage. There are two dams across the river in its course through the city, namely, near Framwellgate Bridge and near Prebends Bridge. These dams impound the water, and consequently sewage matter remains in them for long times at a stretch, the only flushing possible being by means of floods. The fall in the river is not very great, and the difficulty of drainage is thus increased when one bears in mind the very roundabout and tortuous course of the river.

The original scheme adopted by the Council about 1898 was to lay gravitating sewers following the course of the river on both sides to a point opposite Sands House, where the sewage was to be raised by large gas-engines and centrifugal pumps from a pump-well into chemical precipitation tanks. Thence the sewage was to pass through filters and ultimately over about 8 acres of land.

It will be readily seen that with this system the gradients of the sewers were necessarily extremely flat, the flattest one having an inclination of about 1 in 872, while others were of 1 in 670 and 633. This was an imporant point in the drainage system, as these gradients necessarily were not self-cleansing, and the Council feared deposit taking place in the pipes, which fear the author shared.

The alternative of this was to bring the sewage from the Elvet district by means of a tunnel under Claypath to the Sands. Great difficulties and dangers were prophesied, and it was stated that if an attempt were made to drive this tunnel terribly bad ground would be encountered and the cost would be enormous. The Council, however, acting upon the advice of the Engineer, had a series of boreholes sunk along the line of the intended tunnel, which showed the ground to be very much better than the prophets foretold, with the result that the tunnel was successfully driven without incurring any exceptional trouble or expense. The result of this tunnel is that the gradients of the sewers have been greatly improved, the flattest one being 1 in 300, as compared with 1 in 872, for the circuitous route following the river banks. It is also interesting to note that by this means one river crossing was avoided.

Some of the intercepting sewers had to be constructed upon piles in the river, and this was carried out in the following manner. Rolled steel joists were driven to a solid foundation, the soil was excavated to well below water level, the joist was then encased in a sanitary pipe filled with cement concrete. The result of this is that the work has been very satisfactorily done at a very reasonable cost. Flushing chambers are provided where necessary at the heads of the sewers, and a system of ventilation chiefly by shafts near the houses and ventilating manhole covers in the fields will be shortly installed.

The disposal works finally adopted by the Council are as follows:—The sewage upon arriving at the pump-well will be raised by (*a*) small gas-engines and centrifugal pumps dealing with the dry-weather flow, or (*b*) large gas-engines and pumps dealing with the greatly increased flow in times of heavy rains into (*c*) detritus tanks, then passing through (*d*) storm overflows into (*e*) hydrolytic tank, thence through (*f*) rectangular percolating filters, the effluent from which will, by a series of carriers, gravitate over (*g*) about 12 acres of land, and, passing into the underdrains, will ultimately reach the river in a thoroughly purified state. The excess flows from the storm overflows will discharge respectively into the river and on to storm-water percolating filter-beds, so that the system of purification will be very thorough.

The population of Durham has slowly increased during the past twenty or thirty years, but the chief increase took place at Western Hill. Up to 1906 the district was outside the boundaries of the borough, but since then the boundaries have been extended, and the population increased accordingly from about 14,000 up to 18,000. The system of sewers will easily convey the sewage from at least 30,000 population, while the sewage disposal works are designed for 18,000 population, but it should be noted that the system adopted is essentially elastic.

The pumping arrangements consist of two distinct sets of engines and pumps for dealing with the dry-weather flow and storm flow respectively.

Smaller Set.—The smaller set consists of four and eight horse-power gas-engines, driving centrifugal pumps, and designed to deal with the varying rate of flow, the larger engine and pump dealing with the day flow, and the smaller one with the night flow. These engines and pumps will be fixed in the small underground pumping station.

Larger Set.—The larger set consists of two thirty-horse-power gas-engines, driving centrifugal pumps, and designed to deal with the sewage flow during times of exceptional rains, under which conditions the sewage will probably exceed the dry-weather flow many times. (It should be noted that the system of sewers is on the "combined" system—that is to say, the sewage and storm-water discharge into the same system of pipes, although it is ultimately intended to exclude as much storm-water as possible where this is feasible.)

The detritus tanks are of the deep Dortmund type, having conical bottoms. This is intentionally arranged so that the detritus can be discharged from the bottom of the tank by opening a valve without having to empty the tank, as is necessary with the shallow type. The author considers the Dortmund type of detritus tank to be one of the most efficient at present known.

The type of tank adopted is quite different from the ordinary hollow rectangular or septic tank. It will be built of ferro-concrete. It is a very great improvement on the septic tank, as it really separates the sludge from the liquid in a very much more efficient and satisfactory manner than has yet been obtained with any other kind of tank the author is aware of up to this date. The sewage passes through this tank, and in its passage it is freed of nearly all its solid matters and some portion of its colloids also. Valves are arranged in the bottom of the hydrolytic tank so that the sludge can be run off without emptying the tank, and this is a feature of the type. The tank is the subject of a patent.

The sewage after leaving the hydrolytic tank will flow into a centre feed channel between two rectangular filters, over which it will be evenly distributed by means of rectangular distributors. These filters are provided with false floors so as to afford efficient aeration and drainage, and are filled with suitable media (preferably clinker) graded in size. The floors have a cross to fall, and the effluent is collected in channels at the sides, along which it runs to a sump at the lower end, where the humus passing out of the filters with the effluent will be caught.

The total area of the land purchased by the Corporation consists of 19 acres. Of this the cottage, pumping stations, cart road and other walks, tanks and filters occupy about 7 acres, leaving a net area for irrigation of about 12 acres. The ground has been divided into plots and levelled, the surface being formed into ridges and furrows. The land is, generally speaking, of a sandy loam, with little or no gravel, and clay was encountered in one or two places. Underdrains have been laid under the barrow paths and walks, into which the effluent will percolate, ultimately discharging into the river in a purified state through three outlets.

The arrangement for disposing of the detritus from the detritus tanks and the sludge from the hydrolytic tank is by burial in the land. Trenches will be cut about 1 ft. or 15 in. deep in the land, into which the sludge will gravitate. It will then be immediately covered over, and thus aerial nuisance is reduced to a minimum. The matters raised by the rakes from the screen in the pump-well will also be dealt with in a similar manner.

The storm-water filter is constructed in somewhat similar way to the percolating filters, except that it is only 3 ft. deep and the media is of larger size. The storm-water will be roughly distributed over its surface by means of half-pipes or wooden troughs. This filter is also provided with floor tiles to afford the necessary aeration and drainage.

The estimated cost of the entire scheme, including land, disposal works, and intercepting sewers, is about 43,000*l.*, and it is expected that the works will be carried out for a little less than this amount.

Competition News.

STOKE-ON-TRENT TOWN HALL EXTENSION SCHEME.

The assessor in this competition, Mr. Leonard Stokes, F.R.I.B.A., has made the following report:—"A careful examination of the designs sent in for the Town Hall extension competition will, I think, show that the sum of 25,000*l.* is hardly adequate to meet all your requirements. However, of the less costly designs, I am of opinion that the best is No. 33, and the second and third respectively Nos. 1 and 37." The Town Council in Committee, having carefully considered this report, came to the conclusion that the Council would not be justified in carrying out any one of the designs selected by the assessor, on account of the excessive price. On a further inspection of the designs placed first, second, and third, the

Committee were of opinion that, as the cost of the first and third materially exceeded the sum of 25,000*l.*, they were disqualified under rule 15 of the conditions. With respect to the design placed second by the assessor, although they were not prepared to recommend its adoption, they considered that as regarded cost it more nearly conformed to rule 15, and that, therefore, the premium of 100*l.* (for the second place) should be awarded to its author. At a meeting of the Town Council held on Friday, August 13, the above report of the Committee was adopted. The following were the estimates for the designs placed first, second, and third by Mr. Leonard Stokes:—No. 33, 29,000*l.*; No. 1, 25,015*l.*; No. 37, 30,853*l.* The authors of the design placed second are Messrs. Warwick & Hall, of Gray's-inn, W.C. The designs placed first and third by the assessor having been disqualified, the Council have not opened the envelopes containing these competitors' names.

Correspondence.

LONDON COUNTY COUNCIL GENERAL POWERS BILL.

SIR,—I have read with great interest the letters you have published dealing with the London County Council General Powers Act, 1909, and I venture, as a quantity surveyor and as a student of building construction, to draw attention to one or two of the sections upon which considerable differences both of opinion and application may arise. In sect. 22 alternative methods are given for calculating the safe loads which can be carried by stanchions and columns of certain sections, the first of which simply takes the ratio of the least width to the length or height, no matter what the section may be, whereas the section employed makes a great difference in the weight per square inch of metal with which a stanchion may be safely loaded; for example, a box stanchion consisting of two channels or rolled steel joists, with plates riveted to the flanges, will carry considerably more per square inch of section than a large single joist, and yet the ratio of least width to length may be the same in both cases. If the safe load of a stanchion be calculated by both the alternative methods given in the Act, the results will differ; it will be found, for example, that the safe load for a 12-in. by 14-in. stanchion 20 ft. long, consisting of two joists with plates riveted to the flanges and having a sectional area of 52·7 in., is by the first method 168 tons, and by the second method over 197 tons. I have found such discrepancies in all sections calculated by both methods. Architects and surveyors might adopt the first method, the calculation being simpler; but engineers would probably employ the alternative of ratio of length to least radius of gyration. How would the conflicting results be reconciled? The question of eccentric loading has also occurred to me. Does the Act provide such a very moderate weight per square inch of section to enable unequal loading to be disregarded?

Sect. 19, dealing with the superimposed weights on roofs, also presents difficulties. If the slope of the roof is greater than 20 deg. wind pressure, rain and snow shall be estimated at 28 lb. per foot super. of the entire roof surface; but for all other roofs, which would include flats, the superimposed load shall be considered to be 56 lb. per foot of horizontal surface. This requires explanation, inasmuch as the wind pressure on a flat is negligible. The Act is of such great importance that I venture to add my inquiries to those already made, feeling that there must be many who, like myself, fail fully to understand its provisions.

A. J. LOUGHBOROUGH BALL.

SLATING.

SIR,—In reply to "Zax," *re* mitred hips, soakers are not absolutely necessary, especially on high-pitched roofs. A little slate-coloured putty is sometimes used; this helps to steady and keep them in their place.

SLATER.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnes.—Plans, etc., are to be prepared for making-up Carlton-road, and a piece of road between Ferry-road and Byfield-gardens. The following plans have been passed:—Mr. H. Burridge, eleven houses, Martindale, Mortlake; Mr. Archibald Stanley, sixty-seven houses and two shops, Milton-road, Church-path, and Sheen-lane; Messrs. E. Beach & Co., six flats, Lower Richmond-road; Mr. Arthur W. Osborn, seven shops and ten flats, Castlenau. Mr. A. Harvey has lodged plans for additions to the Lawn Convent, Church-road.

Fulham.—Dr. J. Charles Jackson, the Medical Officer of Health, in his annual report, says six systems of combined drainage for portions of which the Council was liable, owing to certain of the pipes which received the drainage of more than one building forming "sewers" within the meaning of the Metropolis Management Act, were reconstructed during the year, at a cost to the Council of 58*l.* 10s. 4d., the work being carried out by a contractor under a schedule of prices. The sum of 159*l.* 5s. 9d. was also paid to owners in respect of work executed by them in compliance with notices served by the Council at eighteen houses in connexion with house drains which were "sewers" as defined by the Metropolis Management Act.

Hampstead.—Dr. G. F. McCleary, the Medical Officer of Health, in his annual report, which has just been issued, says that since the by-laws of the London County Council, with regard to the deposit of plans of drainage work, came into operation, in August, 1903, Hampstead Council has approved, up to the end of 1908, of 310 plans for the drainage of new buildings, and 2,976 plans for alterations, etc., to drains of existing premises. During the twelve months 911 notices of drainage reconstruction or alteration were received, and in 652 cases the work necessitated the deposit of plans and written particulars. In 438 of these latter cases the work could not be delayed until the Council's approval of the plans had been received; in each of these cases the prescribed "urgency" notice was, therefore, submitted by the builders, the work put in hand forthwith, and the plans, etc., deposited at a later date. Of the 652 notices of drainage alterations, etc., requiring the deposit of plans, 294 related to work that involved the entire reconstruction of the drainage system. In 427 of the 652 drainage cases the work was carried out voluntarily, the number of instances in which voluntary complete reconstruction was carried out being 140. The voluntary work was chiefly done in connexion with the larger houses in Hampstead, and in many cases the voluntary drainage reconstructions were of a very extensive character. In many of the metropolitan boroughs, the report goes on to say, considerable sums of the ratepayers' money are expended every year in the repair of combined drains, which by a legal technicality have become "sewers" for which the ratepayers are responsible. In Hampstead during 1908 many claims were made that combined drains were "sewers" repairable by the ratepayers, but all the claims were successfully resisted except three. In these cases, owing to the absence of proper plans, the Council were obliged to assume responsibility for the drains and repair them as "sewers."

Hanwell.—Dr. Thomas, the Medical Officer of Health, in his annual report, says he is pleased to state that owners are now seeing the force of placing iron drains under houses, and this has been done in a great number of cases. During the twelve months eighty-seven drains were tested, either by the water or smoke test, on complaint, or after infectious disease, and on completion of work after notice. The Volatile test has also been applied on numerous occasions during house-to-house and other inspections.

Maldens and Coombe.—The Surveyor has been instructed to prepare specifications for works in connexion with the laying-out of the Station Estate recreation-ground, also to invite tenders. The estimated cost is 923*l.*

Marylebone.—Dr. Alexander Wynter Blyth, the Medical Officer of Health, in his annual report, writes that in a district such as this, where the demolition of old buildings is a matter of pretty frequent occurrence, it is becoming increasingly important that some measures should be taken to prevent nuisances from the dense clouds of dust which are at present raised in the carrying out of the work. A letter was addressed by him to the County Medical Officer of Health, asking whether there was any power to prevent this unpleasant and possibly dangerous nuisance; but a reply has been received that there is no power at present in existence which would enable either the County Council or the Borough Council to deal with the matter. Apart from the nuisance occasioned by the dissemination of dust in this manner, there is also the possibility of infection to be considered. The seriousness of the matter was recognised in Paris some ten or eleven years ago, and a by-law is in existence there compelling house-breakers to water the part of the building which they are pulling down in such a manner as to prevent dust arising from it. It is to be hoped that some such power may be obtained in London before long. House drainage continues to demand the constant and vigilant attention of the department. That the work is increasing is shown by the fact that 480 plans of new drainage were received and dealt with during 1908, as compared with 313 in 1907, an increase of 167. The number of inspections carried out was 4,371, namely, 2,292 in the district north of the Marylebone-road, and 2,079 in the south district. A good deal of overlapping of work and division of responsibility in connexion with drainage alterations has, it is believed, been eliminated. The rule of the department now is that whenever any complaint is received in regard to drainage the district inspector makes a surface examination and the preliminary inspection, using possibly chemical tests, smoke tests, and the like. If he finds that there is a merely trifling defect he carried the remedy through to completion. If, on the other hand, this preliminary examination discloses a more serious state of affairs, he makes a suggestion in his journal that the drains be opened up for examination. After approval by the Medical Officer of Health, the usual request to the Works Department is issued, and the case is thereupon handed over at once to the special drainage inspector concerned, who visits the drains when they are opened up, issues the necessary intimation and statutory notice, and supervises the whole of the reconstruction. In this district, where speculation in lease values appears to be very freely indulged in, one is constantly being asked to allow departures from the strict requirements of statutory notices and intimations. Each case of this kind has to be dealt with on its merits, but the general rule is that lease life is not accepted as an excuse for modification of requirements which would otherwise be necessary. In order to have a more complete record of drainage work, the form used in depositing plans has been slightly amended, and a lengthy form of specification has been drafted which the department now require the builders to fill in in detail. The use of this form has the double advantage that the department gets all the information it requires, and that the architects and builders are shown precisely the nature of the specification which is required from them. Notices of approval of plans are now sent out direct from the Public Health Department, the duplicate being returned to the persons depositing the plans.

Richmond (Surrey).—Dr. Crocker, the Medical Officer of Health, in his annual report, says the drainage of forty-four houses was entirely reconstructed during the year. The new drains are laid upon a bed of concrete, and the joints are made of cement. After passing the water test, the drains are benched with concrete before being covered in, and the water test is applied after the drains have been covered in. Efficient intercepting traps, inspection-chambers, and inlet and outlet ventilation is insisted upon. The sanitary inspector keeps full particulars of this work in his office for reference. The drainage was amended at sixty-two houses, it not being necessary to reconstruct the whole of the drains.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ANDOVER.—Additions, New-street school. Architect, Mr. J. Taylor, The Castle, Winchester.

Bankside (Hull).—Warehouses for Messrs. Sissons Brothers, Hull.

Barrow.—Skating-rink, Abbey-road; secretary, Barrow Rink Company. Twenty-four houses, Devon-street; architect, Mr. A. Ingham, Barrow.

Batley.—Additions, Batley Parish Church. Architects, Messrs. Hoare & Wheeler, Orchard-street, W.

Belfast.—Warehouse for Messrs. Adams. Builder, Mr. J. Hogg, Jury-street, Belfast.

Blackburn.—Church; architects, Messrs. Gradwell & Son, Victoria-street, Blackburn. Mission hall, King-street (2,500*l.*); architect, Mr. F. J. Parkinson, 9, Richmond-terrace, Blackburn.

Bowburn. — Chapel, Bowburn Colliery. Trustees, Wesleyan Community, Bowburn.

Chorlton - cum - Hardy. — Church house. Trustees of Macfadyen new church.

Compton (Leek).—Co-operative premises, for Moorland Co-operative Society.

Croydon.—Skating-rink. Architects, Messrs. Berney & Son, 104, George-street, Croydon.

Dartmouth. — Swimming-baths. Borough Surveyor.

Dewsbury.—Additions, Scarborough Hotel, for Messrs. T. Ramsden, Ltd., Dewsbury.

Dresden.—School. Architect, Mr. J. Brealey, Longton.

Dunfermline.—Printing works, for Messrs. A. Romans & Son.

Eastchurch (Kent).—Additions to school. Architect, Mr. W. Robinson, Caxton House, Westminster.

Garston.—Bank (3,000*l.*); architect, Mr. Woolfall Eccles, Castle-street, Liverpool; builders, Messrs. J. & G. Chappel, Walton.

Glencraig. — Extensions, school (5,000*l.*). Architect, Mr. J. C. Campbell, East Wemyss.

Haverton Hill.—School (4,000*l.*). Builders, Messrs. J. Allison Brothers, Middlesbrough.

Hoylake. — Hospital. Builder, Mr. J. Merritt, Birkenhead.

Hull.—Church, Anlaby-road, and Sunday-school, Argyle-street; trustees, Wesleyan Community, Hull. Mill for Digit Disinfectant Company, Ltd.

Keighley.—Confectionery works (2,000*l.*). Architects, Messrs. J. Haggas & Sons, Keighley.

Kildale.—Wesleyan chapel. Architect, Mr. J. T. Tarran, Hutton Rudley.

Kingwood.—Boot factory, for Messrs. Lovell & Golding, Bristol.

Kirkcaldy.—Factory, for Messrs. Robert Stocks & Co., Kirkcaldy.

Liverpool.—Residence (2,200*l.*); architect, Mr. H. L. Beckwith, Castle-street, Liverpool. Printing works (4,500*l.*); architects, Messrs. J. & A. Burroughs, Vernon-street, Liverpool. House (1,500*l.*); architects, Messrs. Bradbury & Son, Cook-street, Liverpool; builder, Mr. H. E. B. Green, Knight-street, Liverpool.

Llanhilleth.—Police-station. Architect, Mr. H. Tanner, Shire Hall, Newport (Mon.).

Lochgelly.—School (6,000*l.*). Architect, Mr. A. Scobie, 5, Douglas-street, Dunfermline.

Luton.—Additions, workhouse. Builders, Messrs. Barber & George, Luton.

Merside.—Mill, Bank Bottom. Architect. Mr. J. E. Crowther, Merside.

Morley.—Additions to factory, for Morley Cloth Finishing Company, Ltd.

Newcastle-on-Tyne. — Skating-rink. Architect, Mr. G. W. Parkinson, Newcastle (of Parkinson & Sons, Ltd.).

Northwood (Middlesex). — The following plans have been passed:—Additions, St. Helen's School: builder, Mr. W. J. Page. Four houses, Cheney-street, Eastcote; Messrs. Norton Brothers.

Norton-in-the-Moors. — School. Architect, Mr. J. Hutchings, Shire Hall, Stafford.

Oakham.—Additions to church. Builder. Mr. W. Higgs, Oakham.

Oxford.—Additions, Ambroseden School. Architect, Mr. S. Stallard, New-road, Oxford.

Pennel (Carmarshan).—Rebuilding Baptist church. The pastor.

Seaham Harbour. — Primitive Methodist chapel. Architect, Mr. J. W. Phillipson, Newcastle.

Sherborne (Dorset).—School. Architect, Mr. J. Fletcher, Wimborne.

Skipton.—Additions, P.O. (1,500*l.*); architect, Mr. J. W. Broughton, 19, High-street, Skipton. New banking premises (3,000*l.*); architect, Mr. J. W. Broughton, 19, High-street, Skipton.

Taunton. — Post-office. Builders, Messrs. Cowlin & Sons, Bristol.

Tunbridge Wells.—Church. Rev. A. D. Rowe, Wilkins-road, Tunbridge Wells.

Umbersleigh.—School. Architect, Mr. P. Morris, 1, Richmond-road, Exeter.

Waterfoot.—Market hall (1,600*l.*). Architect, Mr. J. Johnson, Council Offices, Rawtenstall.

West Kilbride.—House (2,000*l.*). Architect, Mr. J. Laird, 213, West Campbell-street, Glasgow.

Wick, N.B.—Institute (8,000*l.*). Dr. J. R. McMillan, Union-street, Aberdeen.

Woolford (Bury).—Mills, for Messrs. Hazlett & Co.

Obituary.

MR. H. E. HARRISON.

We deeply regret to announce the death, on August 12, of Mr. H. Erat Harrison, B.Sc., M.I.E.E., the Principal of Faraday House, London. Although only fifty years old, he was one of the pioneers of the electrical industry in this country. In 1882 he organised an electrical engineering college in Red Lion-square. At that time nearly all engineers were of opinion that house lighting by electricity was quite impracticable; they believed that its use was limited to advertising theatres by means of Jablochkoff candles, which, it will be remembered, were the forerunners of arc lamps. It needed no little courage, therefore, seriously to undertake the training of some twenty students, most of whom had serious doubts as to whether there was any opening in what appeared to them to be a somewhat fantastic profession. Some of them who are now leading electrical engineers admit that the thorough grounding in electrical principles they obtained from Mr. Harrison was the main factor to which they owe their success. In 1890 he organised Faraday House, which became almost at once the leading electrical college in London. Mr. Harrison was a strong advocate of the "sandwich" system of training engineers. The course at Faraday House lasts for four years, and during the first year the students receive a thorough grounding in elementary science and engineering. During the second the student goes to the works of a mechanical engineering firm and receives practical training in engine building and erecting. In the third year he returns to Faraday House and attends special lectures in advanced technology, and in his last year he enters one or more of the numerous electrical engineering works affiliated to the college, and acquires practical experience in the construction and use of modern electrical machinery. Mr. Harrison took the keenest interest in the after careers of his pupils, and one of his greatest pleasures was hearing of their success. For several years Mr. Harrison was a valued contributor to the *Builder*, and we may specially mention the series of articles on "Electricity, Magnetism, and Electricity Supply" which appeared in our Student's Column in 1890. He was for six years a member of the Council of the Institution of Electrical Engineers, and was Board of Trade Inspector in electric lighting for several towns in England and Wales.

MR. STANLEY.

The death, on August 14, at his residence, "Camberlow," South Norwood, is announced of Mr. William Ford Stanley, J.P., F.G.S., F.R.A.S., etc., aged 80 years. Mr. Stanley was the founder, and during a long period the head, of the well-known firm trading in Great Turnstile, High Holborn, as makers of drawing, surveying, measuring, optical, and other scientifical and mathematical instruments. Seven years ago he founded and built Stanley Hall at South Norwood—for which he himself made the plans and designs—as an institute for instruction in the arts; he subsequently built and endowed the Stanley Technical Trades Schools. Mr. Stanley began his career under indentures to his father, a mechanical engineer, of Buntingford; in 1854 he started in business as a worker in ivory and metal, and then applied himself to the making of scientifical instruments and appliances. He was the author of several text-books upon surveying and drawing instruments, of a treatise upon the properties and motions of fluids, and, in 1895, of a volume dealing with the nebular theory.

MR. D. C. PROUDFOOT.

The death took place on the 6th inst., at Braemar, where he had gone for the benefit of his health, of Mr. D. C. Proudfoot, formerly Road Surveyor for the City of Edinburgh. The deceased, who was about 73 years of age, retired three years ago, when Mr. Sim was appointed his successor. In 1869 Mr. Proudfoot joined the City Road Trust as surveyor, but in 1878 the department was transferred to the charge of the Corporation. He was the pioneer of steam road rolling in Scotland. He introduced the first road roller in Scotland in 1870, and this engine is still in use driving a stone crusher.

MR. JOHN HUTTON.

The death has occurred at Blackpool of Mr. John Hutton, builder, of 1, Cowper-street, Leeds. Mr. Hutton, who was in his 90th year, was concerned chiefly in the erection of terrace houses and villa residences suitable for business men of moderate incomes.

General Building News.

ST. MARY'S CHURCH, WHAPLODE.

Mr. W. Weir has been appointed to carry out the reparation of the parish church, Whaplode, Lincolnshire, whereof the Norman nave was extended, westwards, in the XIIIth century, and has an open roof. To the south-east stands the XIIIth century tower, having a chapel at the ground level which formerly opened into the nave. The church contains the vault of an old Lincolnshire family, the Irbys, Barons Boston.

DIGBY PARISH CHURCH, LINCS.

Mr. W. Bond, of Grantham, has been appointed as architect for the enlargement of the church, dedicated to St. Thomas of Canterbury, at Digby, in the parts of Kesteven, near Sleaford. The church, mainly in the Decorated style, is a handsome edifice, with embattled walls, a richly ornamented Norman doorway, and a tower having battlements and crocketed pinnacles, surmounted with a spire.

PRIMITIVE METHODIST CHURCH, SEAHAM HARBOUR.

The foundation-stones of the new Stewart-street Primitive Methodist Church, Seaham Harbour, were recently laid. The plans have been prepared by Mr. J. W. Phillipson, architect, Newcastle, and the contract for building is in the hands of Mr. T. Curry.

NORTH PERROT CHURCH, SOMERSET.

Additions are about to be made to the parish church of St. Martin, North Perrot, near Crewkerne. The cruciform church was built in the later years of the XVth century; it contains an altarpiece sculptured in alto-relievo by Westmacott the younger, representing the Last Supper, and modelled after Leonardo da Vinci's wall painting at Milan. The new work at the church will be carried out, we understand, by Mr. W. D. Caröe.

NEW CHURCH, CLEVELEYS.

The foundation-stone of the new church of St. Andrew, Cleveleys, will shortly be laid. A total of 10,000*l.* will be needed for the church, vicarage, and Sunday-school. The church itself will cost about 5,000*l.*, and will seat 550. The architect is Mr. R. H. Cunliffe, of Accrington.

SECONDARY SCHOOL, BARNSTAPLE.

A secondary school is being built in this town by the Devon Education Committee, at a cost of 14,000*l.* It will accommodate 150 boys and 150 girls, and has been designed by Mr. Percy Morris, Architect to the Committee, and Messrs. G. Pollard & Co., Ltd., are the contractors.

INFANTS' SCHOOL, SOUTH SHIELDS.

A new infants' school has been erected by the South Shields Town Council. The site is one of 7,965 sq. yds., and the scheme provides for the erection ultimately of boys' and girls' departments. The total cost of the structure and the caretaker's house, exclusive of land, furnishing, and professional charges is about 6,800*l.* Messrs. Stephen Sheriff & Sons were the contractors, and Mr. Henry Grieves was the architect.

NURSES' HOME, TIPTON.

The new premises of the Tipton Nurses' Home, formerly a private residence, have now been opened. The house has been altered to suit the purpose for which it is intended, plans and specifications having been drawn up by Mr. G. H. Wenyon, and the contract executed by Messrs. Henry Smith & Son, West Bromwich.

PAROCHIAL BUILDINGS, GATESHEAD.

New parochial buildings are being erected for St. George's Church, Gateshead. The buildings are intended to be of coursed rock-faced stone walling to main fronts, with chiselled bays and dressings, covered with grey slates. The cost, exclusive of furnishing, is estimated at 2,800*l.* The plans for the building were competitive, and those placed first by the assessor, Mr. G. Hodgson Fowler, were prepared by Mr. Richard Wylie, of Gateshead.

NEW BUILDINGS, ULVERSTON.

At a recent meeting of the Ulverston Rural District Council, the Plans and Finance Committee recommended for approval plans for an addition to farm buildings at Headhouse Farm, Newton-in-Cartmel, for Mr. H. Hibbert, J.P.; additions to bungalow at Kirkby, for Mr. R. W. Taylor; bungalow at Staveley, Lake Side, for Mr. H. P. Hay; plan for villa at Barrowfield, Pennybridge, for Miss Fairhurst; proposed lodge at Tower Wood, Windermere, for Messrs. Harrison, Hall, & Moore, architects; new farmhouse and buildings at Scutcheon House Farm, Sawrey, for Mr. R. H. Edmondson, J.P.

THE MANSION HOUSE.

Advantage is being taken of the civic vacation to increase the provisions against fire at the Mansion House. The work is being executed for the Corporation on plans and suggestions made by Mr. Sydney Perks, the City Surveyor. The general idea of the scheme is the separation of the Egyptian Hall from the domestic offices and State apartments by means of steel doors. Special attention is being given to the Egyptian Hall, as it is erected immediately over the kitchens. Iron and steel doors are also being erected in the State drawing-rooms and the saloon, and an iron and glass screen will be placed at the east end of the Egyptian Hall. Iron gangways are being placed on the roof to facilitate the escape of the domestic staff, and fire alarms and appliances are being overhauled and hand extinguishers provided throughout the building. The cost of these works will be over 1,000*l.*

RENOVATION OF THE CITY GUILDHALL.

On the initiative of the City Surveyor, Mr. Sydney Perks, and under the direction of the City Lands Committee of the City Corporation, the work of renovating the interior of the Guildhall is in progress. The stonework, which for a very long period has been covered with buff paint, is now being cleaned, and when the work is completed it will greatly lighten and improve the Guildhall. Under Mr. Perks's direction, also, improvements are being carried out in the crypt. Until recently admittance has been gained through a small and inconvenient doorway, the ancient entrance having been hidden and boarded up. This entrance also could only be reached by a ladder. The obstructions have now been

removed; with the result that the ancient gateway has been exposed and is entirely visible. A staircase also has been built of wood, obtained from a house in New Broad-street, and forms an excellent entrance to the crypt. The fact of the reopening of this gateway is, says the *Telegraph*, of great interest, and it may be pointed out that until this reopening no one previously had entered the crypt through the gateway for hundreds of years. The stonework of the entrance, which is in keeping with the rest of the building, dates from 1420, and is in a good state of preservation. The old hinges, on which the former gate hung, still exist, and the marks of the original steps are still to be seen. On either side of the old gateway were discovered portions of niches, which were evidently used for holding statues, and in some of which remnants of the material can be seen.

TRADE NEWS.

New schools have recently been erected at Bristol, in Sommerville-road. They have been built by Messrs. Humphries & Son from the designs of Messrs. Gough & Sons, of Bristol. The stone used is St. Aldhelm box ground from the Box Hill quarries.

The Chilvers Cotton new schools are being ventilated with Shorland's patent exhaust roof ventilators supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Stained Glass & Decoration.

WESLEYAN CHAPEL, WESTBOURNE-GROVE, WEST KIRBY.

A large stained-glass window, consisting of three lights, has just been erected in this church; the centre light depicts the "Ascension of Our Lord," and in the side lights are shown two incidents from the life of Our Lord. The work was carried out by Percy Bacon & Brothers, of London, under the supervision of Mr. Edmund Ware, architect, of Liverpool.

Appointment.

Mr. J. W. Harrison, Surveyor to Wombwell (Yorks) Urban District Council, has been appointed, out of 146 candidates, Surveyor to the Uxbridge Rural District Council. Mr. Harrison, prior to going to Wombwell, five years ago, was Building Surveyor to Birkenhead Corporation, and before that was connected with the sanitary department of the Bradford City Council.

Sanitary and Engineering News.

GRAVING DOCK, SOUTH SHIELDS.

An extension in connexion with ship repairing work has been made at South Shields by the Middle Docks and Engineering Company, Ltd. The principal feature of the undertaking has been the construction of a new graving dock, to accommodate the biggest vessels trading to the Tyne, together with engineering shops, pumping-station, plate-sheds, and brass foundry. The length of the dock, which is the largest in Shields Harbour, from the inner side of the gates to the face of the coping at the head is 460 ft. It is 62 ft. 6 in. wide between the pier-heads, and the depth of water over the sill is 23 ft. 6 in. at high tide. The contractor for the work is Mr. Louis P. Nott, of Westminster, and it has been executed according to the designs and specifications, and under the supervision of Mr. Thos. Hanning, M.Inst.C.E., of Newcastle.

FERRO-CONCRETE BRIDGE, STAKEFORD.

The official testing of the ferro-concrete bridge over the River Wansbeck was recently carried out under the superintendence of Dr. A. W. Wrightmore, Government Inspector. Amongst those present were:—Mr. D. Balfour, jun., M.Inst.C.E., representing the engineers; Messrs. Balfour & Son, of Newcastle-on-Tyne; Mr. Bean, County Surveyor; Mr. T. J. Gueritte, of Messrs. Mouchel & Partners; Mr. C. W. Brims, of Messrs. Brims & Co., contractors for the work. The length of the structure between abutments is 264 ft., which is divided into six spans of 44 ft. each. There is a 20-ft. carriage-way and 4-ft. footpath. The borings for the foundation showed that rock was found 37 ft. from the surface on the south side, 24 ft. in the centre of the river, and 20 ft. on the north side, with bands of rock nearer the surface. The whole structure is carried by 14-in. by 14-in. ferro-concrete piles driven down to the rock by a Lacour steam piling machine, with a 1½-ton ram and a drop of 5 ft. In no case has the set of the piles with ten blows exceeded ¼ in. The abutments consist of ferro-concrete carried on a pile foundation, properly braced. Each pier has two ferro-concrete cylinders, each enclosing two piles having vertical steel rods embedded in concrete filling and cross-braced together. The main girders rest on the piers, and carry the cross-girders, which support the decking of the roadway, on which is laid tar macadam for the carriage-way and cement concrete for the footpath. On each side of the roadway there is an iron hand-railing, with pillars at each pier. The bridge was tested first by two 16-ton steam rollers standing side by side in the centre of each of the six spans, when the deflection was found not to exceed ⅛ in. on any of the spans. The engines were then run across the bridge at varying speeds, when the above deflection was not exceeded. The maximum deflection allowed in the specification was ¾ in.

BLACKFRIARS BRIDGE AND SUBWAYS.

The work of widening Blackfriars Bridge by 30 ft. on the western side is now practically complete. All that remains to be done is the repaving of the old part of the bridge; and by the end of the present month, or at latest the first week in September, the widened bridge will be available for traffic. With the present addition the width of the bridge will be 105 ft. between parapets, making it the widest bridge across the Thames. The new roadway is 73 ft. wide and the footpaths each 16 ft. wide. The whole of the bridge has been repainted. With the exception of the shore span on the northern side, the old face ribs and parapets have been utilised for the new western arches. The subways now under construction at the northern end of the new bridge will also be completed at an early date. It will be remembered that the scheme adopted provides for two shallow subways between the Thames-embankment and Queen Victoria-street, each 10 ft. wide and 8 ft. high. The more important subway, that from the Embankment to the corner of Bridge-street and Queen Victoria-street, is completed except for the tiling; work on the second subway will now be vigorously prosecuted, and should be finished within three months from the present time. The difficulties of the work have arisen out of the necessity of diverting two 24-in. and other large gas mains of the Gas Light and Coke Company, as well as water mains. In connexion with the second subway it will be necessary to reconstruct the crown of the Fleet sewer, and to divert the main supply cables of the Charing Cross, West-end, and City Electricity Company—the latter a somewhat delicate task necessitating the laying of temporary duplicate mains. There will be every inducement for the public to use these subways, as the floors will be only 10 ft. below street level. Mr. Anderson is acting for the Corporation on behalf of the City Engineer.—*Times.*

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Mr. W. L. Lucas is moving from 17, Ryder-street, St. James', S.W., to larger offices, and on and after August 21 his address will be 6, The Sanctuary, Westminster, S.W.

HOLY TRINITY CHURCH, KINGSWAY.

The question of the demolition of Holy Trinity Church, Kingsway, was dealt with at a London Consistory Court, presided over by the Chancellor, Dr. Thomas Tristram, K.C., at St. Paul's Cathedral, on the 5th inst. The Rev. J. L. Evans, vicar, who appeared on behalf of the churchwardens and parishioners, asked the Court to grant a faculty to pull down the present church and remove certain human remains under the church to consecrated ground. The church was built in 1831, and was restored in 1887. In 1904 the construction of Kingsway was commenced by the London County Council, and in the following year the church began to crack. In 1906 the arches of the vaults inside the church had to be shored up, and in 1908, with the sanction of the Bishop of London, the church was closed. In the same year they had a "dangerous structure" notice served upon them with a magistrate's order. In consequence of the large amount of water drawn away by the construction of the tube railway and other excavations, said the vicar, the church was shattered and rendered unfit for worship. It was proposed to erect a new church at a cost of 8,000*l.*, of which at present 6,500*l.* had been raised. The faculty was granted.

IMPROVEMENTS OF STREETS IN THE CITY OF LONDON.

In his annual report Mr. Frank Sumner, City Engineer, states, in respect of the current widening of Fleet-street (south side), that the Corporation have resolved to complete the entire widening, at an outlay of 500,000*l.*, subject to the payment of one-half of that sum by the London County Council, who, during the twelve months, contributed 8,382*l.* towards the works now in progress there, as well as 2,328*l.* towards the cost of increasing to 50 ft. the width of Mansell-street, between Aldgate and the City limits. Notices to treat have been served upon owners for the acquisition of their interests for carrying out the widening to 70 ft. of Bishopsgate-street Without, the London County Council agreeing to contribute 156,950*l.* upon a condition, acceded to by the Corporation, that a tramway shall be laid down between Middlesex-street and the City boundary. A widening of Lower Thames-street is contemplated by the Corporation.

THE MUSEUMS ASSOCIATION.

In the course of his address as President of the twentieth annual conference of the Association, held at Maidstone last month, Mr. Henry Balfour, M.A., Curator of the Pitt-Rivers Museum, Oxford, dwelt upon the necessity of a national folk museum for Great Britain, to be based upon the model of the Nordiska Museum, founded in Stockholm by the late Dr. Artur Hazelius. An interesting paper upon "General and Local Photographs in Museums," was read by Sir Martin Conway. Dr. Tempest Anderson, President of the Yorkshire Philosophical Society, was elected President for next year, when the conference will be held at York.

ROMAN REMAINS, NORTH-WEST KENT.

Excavations are being made upon the property of the Associated Portland Cement Manufacturers, Ltd., near Northfleet, and the foundations of a Roman villa have been discovered, together with a well, about 12 ft. deep, pavements of red tile, and a large quantity of vases, pottery, etc. Close by are the Swanscombe Woods chalk pits, where British flint tools and weapons, and horn implements, with Roman utensils, have just been found. Swanscombe—originally Swenes-camp—derives its name, reputedly, from the landing there of Sweyn, King of Denmark, and is the place where the Kentish men obtained from William the Conqueror a confirmation of their ancient privileges, particularly of the law of gavelkind. There had been Roman settlements at Springhead, near Gravesend, Southfleet, Dartford, and elsewhere around in proximity to the more ancient Watling-street.

THE LATE MR. PENFOLD'S ESTATE.

The estate of the late Mr. John Wornham Penfold, F.R.I.B.A., F.S.I., and sometime surveyor to the Goldsmiths' Company, who died on July 5, has been valued at 62,071*l.* gross, with 49,076*l.* net personalty. The bequests include 100*l.* to the Architects' Benevolent Society, 500*l.* to the Surveyors' Institution, and 150*l.* to the Trustees of the Charitable Fund of the Surveyors' Club.

THE OLD MAIN BRIDGE AT FRANKFORT.

The Town Engineer at Frankfort has worked out a scheme, which is universally approved, for preserving the memory of the historical old bridge. This consists in building a new bridge similar to the old one. The unnoticeable deminution in the number of arches provides the necessary width in the span of the new arches.

NEWCASTLE CITY ENGINEER'S REPORT.

The report of the City Engineer of Newcastle (Mr. C. R. S. Kirkpatrick) to the Town Improvement and Streets, Sanitary, and other Committees for the year ended March 31, 1909, states that the estimated expenditure for 1909-10 on roads and streets and cleansing amounts to 84,342*l.* Last year the expenditure was 88,969*l.* The amount expended on sewers during the past year has been 3,968*l.* The total length of sewers added during the year has been about four and a half miles. The expenditure on maintenance of macadamised roads during the past year has been 9,834*l.*, inclusive of 945*l.* spent on tar-spraying. There has been a reduction in the quantity of street sweepings and road slurry removed, principally due to the roads being tarred. The cost of the work done in new streets under Council and other orders (and recoverable from property owners) has been 20,388*l.* In addition, 13,170*l.* has been expended on work done for gas, water, and other companies, making a total of 33,558*l.* for the year, exclusive of 10,224*l.* for tramway track maintenance, repairs and renewals, etc. The expenditure on the general maintenance of the tramway track for the year ended March 31, 1909, has been 7,313*l.* A vehicle fitted with carborundum blocks has been engaged by night grinding the rails to remove corrugations, with satisfactory results. The cost has varied from 6d. to 1s. per lineal yard. It is found that immediately the corrugations are removed the maintenance on that section of the track is automatically reduced. The

construction of the new berth (360 ft. long) at the east of the Ouseburn has been continued, but progress has been slow owing to the clay passed through being exceedingly hard, necessitating continual blasting. The cost during the year on works has been 14,184*l.*, making a total cost to date (exclusive of land), under the Act of 1904, of 26,349*l.* The total expenditure for the year ended March 31, 1909, for the various committees was 211,753*l.*

SANITATION IN LAMBETH.

The annual report of the Medical Officer of Health for Lambeth, just issued, mentions that there are 41,511 inhabited houses, giving an average of 7·3 persons per inhabited house. Dealing with combined drainage, the report states:—"The law, as it at present stands, throws the responsibility upon the Borough Council of repairing certain combined drainages as sewers, and as the property of the sanitary authority, but a large number of combined drainages are relaid by private owners as the result of voluntary work or of the service of notices by inspectors. In these latter cases, the owners are either responsible, by virtue of the sanitary authority possessing a plan or application (or both) in connexion with the combined systems of drainage, or prefer that the combined drains should be regarded as 'drains' and not as 'sewers.'" Under the system of house-to-house inspection 2,520 visits were made during the year. In 373 houses a result was obtained from the chemical test applied to the drains. Altogether there were found to be as many as 1,733 nuisances in the houses inspected, but usually the nuisances were of a trivial character.

RECEIVING HOMES FOR LUNATICS.

As has been reported in the *Builder*, the London County Council, at its last meeting prior to the summer recess, decided to make application to Parliament for powers to establish and maintain receiving houses for alleged lunatics. The question of providing such accommodation has been before the Council for some time. Ten years ago there was a suggestion that four receiving houses should be established, two north and two south of the Thames. The cost of the land was then stated to vary from 2,000*l.* to 3,000*l.* an acre in the south-east and south-west districts, and from 8,000*l.* to 10,000*l.* an acre in the north and north-east districts, and that the cost per bed for building and equipment would be probably 300*l.* Later, in 1902, the Finance Committee pointed out that the cost would be about 500,000*l.*, but now the Asylums Committee does not think such a large expenditure will be necessary. The Committee considers that one home on the north and another on the south, each to accommodate 250 patients, will meet the needs of the case. It has already been suggested that a site in North London, which has been purchased for another purpose, should be utilised, and thus it will only be necessary to secure a site in South London. The total cost of the whole scheme therefore is estimated at 150,000*l.* to 200,000*l.*

DESIGNS OF BUILDINGS ON CROWN PROPERTY.

In the House of Commons on Tuesday, Mr. Ashley asked the Prime Minister if his attention has been called to the statement by the directors of the Piccadilly Hotel, Ltd., now in liquidation, that alterations in the designs of the building were insisted on by the representatives of the Crown as landlord, which entailed an expenditure of about 160,000*l.*, and a further large loss owing to the diminished rentals of shops sublet in the building; and whether it is proposed to continue this system? —Mr. Hobhouse replied:—I have seen the statement referred to, but there must, I think, be some mistake in it, as I am advised that the Crown requirements (which were, in the main, settled by the previous Government) could not in themselves have entailed the extra cost or loss in rental alleged. It is clearly desirable that, in the case of large rebuilding schemes on Crown property, due regard should be paid to the architectural result, and I am not prepared to say that a slight additional expense is not sometimes justified for this purpose. At the same time, I can assure the hon. member that care is taken that commercial considerations are not overlooked—indeed, I am at the present moment considering the best method of securing these two objects in another important rebuilding scheme. Mr. Ashley: Will the right hon. gentleman say why, what is justified in the case of the State, is not justified in the case of an individual owner? Mr. Hobhouse: I do not think that there is anything unjustifiable in requiring a lessee of property to conform to architectural requirements. Mr. Ashley: Will the right hon. gentleman kindly give that information to the right hon. gentleman, the Chancellor of the Exchequer? No reply was given.

PUBLIC WORKS IN URUGUAY.

The British Consular Report on Uruguay, which has just been issued, says that the construction of the Rambla del Sud has been entrusted to a British syndicate; this great engineering work, which will take five years to complete, and cost 1,355,000*l.*, will add greatly to the attractiveness of Monte Video, which is rapidly becoming not only the chief commercial port of distribution for the southern part of South America, but also a favourite resort for tourists and summer residents. The embankment, which will be 4,330 yds. in length, will consist of a stout sea wall, 13 ft. above sea level, and an esplanade 75 yds. wide, available for tramways, carriage roads, footpaths, and rows of trees. The proposed line of embankment takes a gentle outward curve, and, as it will run a considerable distance from the present irregular natural coast line, a large area of land will be reclaimed from the sea. The total area of land thus to be reclaimed is calculated at not less than 125 hectares, or about 308 acres. After deducting the quantity necessary for the esplanade, streets, etc., there will remain available for building purposes over 800,000 sq. metres. Part of this land will be assigned to the Government, and the remainder will be the property of the syndicate; the minimum price of the land is fixed at $9 per square metre. A scheme dealing with the long-standing problem of improving the connexions between the old and new part of the city is under serious consideration. The idea of it is to a large extent copied from the Victor Emmanuel II. Gallery of Milan, and the plans have been prepared by a Swiss architect, assisted by Uruguayan engineers. In connexion with lighthouse reform, the most important work is the erection of a lighthouse on the north point of the "English Bank," near Monte Video, which it is estimated will cost about 40,000*l.* The Government have obtained the sanction of the Chambers for this expenditure, but have deemed it advisable to defer for the present the commencement of a work the urgent necessity of which is nevertheless recognised by all navigators.

BRUSSELS INTERNATIONAL EXHIBITION, 1910.

The exhibition will be held in buildings erected on the Solbosch plain, having the Bois de la Cambre in the background. The British section is to be organised by the Exhibitions Department of the Board of Trade, and the recently-adopted system of collective exhibiting will be employed as far as possible. A roads congress will be held; the grounds are to be laid out as gardens, with exhibits by the Gand horticulturists, and a reproduction of Old Brussels will be erected.

GARDEN SUBURB, WALLINGTON.

A local committee is formed to acquire and lay out the Elm Grove estate of 30 acres, in the parish of Wallington, near Carshalton and Sutton, which can be purchased for 7,500*l.* It is proposed to constitute a company, under the name of East Surrey Tenants, Ltd., and to proceed upon a co-operative basis of profitable development, and at the same time to preserve the natural beauties of the property, which is traversed by the Wandle. A large flower garden is comprised in the scheme.

OPEN SPACES AND RECREATION-GROUNDS.

The Eastbourne Town Council have applied to the Local Government Board for a loan of 22,300*l.* to enable them to buy and lay out public parks and pleasure-grounds; the loan includes 20,000*l.* in respect of the 15 acres of Gildridge Park, now owned by Mr. D. Gilbert, lord of the manor of Eastbourne. The park adjoins the land of the Duke of Devonshire, who recently arranged to present the garden at Motcombe as a free gift to the town.——The Willesden District Council have accepted an offer of 30 acres of grassland for a recreation-ground, at the price of 600*l.* per acre.——In pursuance of the will of the late Mr. John Innes in favour "of the inhabitants of the parishes of Merton and Morden," the grounds of Manor Farm have just been opened to the public, and 2 acres of the land are reserved for the Horticultural College.——Barnes Park, Sunderland, extending over 32 acres, with stream, lake, playgrounds, and bowling-green, and the Grove Hall estate, at Bow, have just been opened to the public.——An appeal is made for contributions to a sum of 10,000*l.* in aid of a scheme for the equipment, with a gymnasium, and additional residential accommodation for fifty young men, rifle-range, running track, tennis courts, etc., of an estate of 3 acres, which the Hackney Y.M.C.A. have secured at Stamford Hill; the two old houses upon the property will be converted for purposes of an institute and hostel.——A perambulation, with marking and railing-in of the boundary stones set up in 1641, has just been made by the Essex Field Club of the ancient Forest of Essex, or Waltham Forest.

Patents.

APPLICATIONS PUBLISHED.*

15,773 of 1908.—Pirojsha Barjori Godrej: Locks.

16,832 of 1908.—Albert Lespagnol: Means for applying pressure to the wires used for sawing stone or the like during the sawing operations.

17,081 of 1908. — Michael Freshfield: Wrenches.

17,334 of 1908.—Walter Noble Twelvetrees: An instrument or appliance to facilitate calculations connected with the designing of reinforced concrete beams, slabs, floors, and the like.

20,202 of 1908.—Emil Prager: Window-holding devices.

20,296 of 1908.—Frederick Randolph Martin and Richard Alfred Fulford: An adjustable jointed hinge for adjusting doors or lids upon that side of same where the hinges are fixed.

20,705 of 1908.—John Thomas Chappell and George Henry Chappell: Construction of walls and the like.

22,888 of 1908.—Richard Bowden Waters: Stay and manhole fastening as applied to tanks and the like.

686 of 1909.—James Hunt Dyett and Frank Alfred Howson: Method of and machine for moulding bricks.

847 of 1909.—Guiseppe Mazzolini: Doors, hatches, or like closing devices.

3,063 of 1909.—M. Schubert & Co.: Combined sliding and swivelling windows.

4,157 of 1909.—Ernest Homan: Fireproof floors, partitions, and the like.

11,982 of 1909.—Samuel Pope Evans and Henry James Warrington: Overflows of lavatory bowls or the like.

12,364 of 1909.—Thomas Augustus Harris: Overflow of lavatory basins, baths, sinks, and the like.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

August 5.—By H. P. STACE (at Banbury).	
Middleton Cheney, Northants.—Middleton House and 5 a. 2 r. 34 p., f.	£1,000
Enclosure of arable land, 8 a. 3 r. 15 p., f.	400
August 6.—By GEORGE SYMONDS (at Diss).	
Rickinghall, Suffolk.—Freehold and copyhold farm, 56 acres	750
Mellis, Suffolk.—Cow Pasture Farm, 103 a. 2 r. 35 p., f.	1,800
August 7.—By R. L. ASHTON (at Okehampton).	
Beaworthy, Devon.—Burden Farm, 116 acres, f.	1,525
August 10.—By R. DONKIN & SON (at Newcastle-upon-Tyne).	
Hexham, Northumberland.—Linolds and Bank Head Farms, 345 acres, f.	8,000
August 11.—By ALEXR. MOSSMAN.	
Paddington.—35, Brindley-st., u.t. 35 yrs., g.r. 5*l.*, w.r. 41*l.* 12s.	100
40, Praed-st., u.t. 13 yrs., g.r. 6*l.*, w.r. 75*l.* 8s.	175
Hadleigh, Essex.—Castle-rd., three plots of land, f.	146
By FRED VARLEY & SON.	
Finsbury Park.—24, Romilly-rd., u.t. 58 yrs., g.r. 6*l.*, e.r. 40*l.*	275
By JAMES ELEY (at Boston).	
Butterwick, Lincs.—Enclosures of arable land, 22 a. 2 r. 20 p., f.	1,855
By BIDDELL & BLENCOWE (at Bury St. Edmund's).	
Belchamp St. Paul's, Essex.—Lambert's Farm, 38 a. 1 r. 2 p., f. and c.	580
Capper's Farm, 13 a. 1 r. 37 p., f. and c.	1,200
Cavendish, Suffolk.—The Yews, f.	500
Business premises, residence, and garden, f. and c.	568
High-st., seven cottages, f.	225
August 12.—By STIMSON & SONS.	
Norwood.—71, Beulah-hill, f. y.r. 75*l.*	540
Paddington.—5 and 6, Paddington-green, profit rental of 224*l.* for 7½ yrs.	950
South Lambeth.—43 to 51 (odd), Portslade-rd., u.t. 69 yrs., g.r. 25*l.*, w.r. 156*l.*	560
Caledonian-rd.—25A and 26A, Sutterton-st., u.t. 42 yrs., g.r. 12*l.*, w.r. 67*l.* 12s.	250
Clapton.—Winslade-rd., l.g. rents 34*l.*, u.t. 36 yrs., g.r. 4*l.*	420
Stockwell.—Hargwyne-st., l.g. rents 21*l.*, u.t. 55 yrs., g.r. 10s.	350
Shepherd's Bush.—Ellerslie-rd., l.g. rents 24*l.*, u.t. 56 yrs., g.r. 4*l.*	335
Stoke Newington.—Albion-rd., l.g.r. 15*l.*, u.t. 51 yrs., g.r. 4*l.*	180
Battersea.—11 and 13, Savona-st., u.t. 41 yrs., g.r. 4*l.*, w.r. 46*l.* 16s.	210
Camberwell.—153, Warham-st., f., w.r. 31*l.* 4s.	225
138, Farmers-rd., f., e.r. 20*l.* 16s.	145

***Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.**

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50*l.*, 25*l.*, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* NO DATE.—**Cardiff.**—NATIONAL MUSEUM.—Competitive designs are invited for the erection of a new National Museum at Cardiff. Three premiums are offered. See advertisement in this issue for further particulars.

* NO DATE.—**Eltham.**—PARISH HALL.—The Committee invite designs for Parish Hall at Eltham, Kent. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

AUGUST 23. — **Abercynon.** — HALL, ETC.—Chapel hall and schoolrooms at Abercynon, for the Trustees of the Presbyterian Forward Movement. Mr. Arthur Lloyd Thomas, architect and surveyor, Pontypridd.

AUGUST 23.—**Barrow.**—ALTERATIONS.—Alterations required at the Roose-road Branch of the Barrow Co-operative Society, Ltd. Specifications, etc., may be obtained from Mr. E. M. Young, architect, Duke-street.

AUGUST 23.—**Carrickreagh.**—VILLA RESIDENCE.—For building a villa residence at Carrickreagh, Enniskillen, for Mr. F. Sandford Pakenham, in accordance with plan, etc., to be seen at offices of Messrs. R. E. Buchanan & Co., architects, Castle-street, Londonderry.

AUGUST 23. — **Newtownmountkennedy.** — COTTAGES.—Rathdrum R.D.C. invite tenders for the building of twenty-two cottages at Newtownmountkennedy, Co. Wicklow, in accordance with plans, etc., prepared by Mr. George T. Moore, A.R.C.S.I., M.Inst.C.E.I., Engineer to above Council, 1 and 2, Foster-place, Dublin. Bills of quantities, prepared by Mr. James Mackey, quantity surveyor, 58, Dame-street, can be had from Mr. Moore on application and lodgment of 1*l.* 1s.

AUGUST 23. — **Whitchurch.** — COTTAGES. — Six cottages and additions to eight others, at Whitchurch, for Mr. William Lewis. Plans, etc., can be seen, and quantities obtained, at the office of Mr. Sidney Williams, architect and surveyor, Wharton-street, Cardiff.

AUGUST 23.—**Wigglesworth.**—CHAPEL.—For a new Wesleyan Chapel at Wigglesworth. Plans, etc., may be seen at the Wesleyan School, Settle.

AUGUST 24. — **Cottingham.**—WALL.—Cottingham U.D.C. invite tenders for the erection of a new shed and boundary wall, at Market Green, Cottingham. Drawings, etc., may be seen, and further information obtained, at the Council Office.

AUGUST 24.—**Ennistymon.**—COTTAGES.—The D.C. of the Ennistymon Rural District invite tenders for building single labourers' cottages and fencing plots. Plans, etc., can be obtained from the Clerk to the D.C. A sum of 5s. must be paid for the plan and specification, and a deposit of 1*l.* must be made for tender form.

AUGUST 24.—**Leeds.**—WORKS AT TOWN HALL, ETC.—The Property Committee invite tenders for the joiner's, builder's, and plumber's work required at the Town Hall, Municipal Buildings, and Judges' House, Clarendon-road. Specifications and bills of quantities at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

AUGUST 24. — **Manchester.** — WASHBATHS, ETC.—Manchester Corporation invite tenders for the erection of washbaths and washhouses, Armitage-street, Ardwick. Drawings may be seen, and specifications, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 2*l.* 2s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

AUGUST 24.—**Warrington.**—HOSPITAL WARD.—The Health Committee of the Council of the County borough of Warrington invite tenders for the erection of an administrative ward at the Sankey Hospital. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall. A deposit of 1*l.* 1s. will be required for quantities. Cheques to be made payable to the Borough Treasurer, Warrington.

AUGUST 25.—**Barry Dock.**—DRILL HALL RENOVATIONS.—Tenders are required by the Glamorgan Teritorial Force Association for alterations and extensive renovations to the Royal Garrison Artillery Drill Hall premises at Barry Dock. Copies of the schedules may be obtained on application to the architect, Mr. W. H. Dashwood Caple, 2, Church-street, Cardiff, on deposit of 10s.

AUGUST 25.—**Bovey Tracey.**—FARMHOUSE, ETC.—For a farmhouse at Elsford, Bovey Tracey, for Messrs. Daniel Wrayford & F. Amery, and for additions to Riley Farmhouse, Hennock, for Mr. James Bawdon. Plans, etc., can be seen at the offices of Mr. Saml. Segar, F.I.A.S., architect, 24 and 26, Union-street, Newton Abbot.

AUGUST 25.—**Hirwain.**—VILLAS AND COTTAGES.—Work required in completing four pairs of semi-detached villas and ten cottages at Hirwain, Glam., for the Tudor Building Club, Hirwain. Plans, etc., may be seen either at office of Mr. Thomas Roderick, architect, or with Mr. J. B. Young, Estate Offices, Hirwain.

AUGUST 25.—**Sandwich.**—REPAIRS.—For repairs to be carried out at the Sandwich Council School and teachers' dwelling-house, for the Kent Education Committee. Specifications can be seen, and information obtained, at the offices of the Correspondent, Mr. F. S. Cloke, Salisbury House, Strand-street, Sandwich.

* AUGUST 27. — **Aylesbury.** — STABLES, STORES, SHEDS, ETC.—The Aylesbury U.D.C. invite tenders for new stables, stores, sheds, etc., off Cambridge-street. See advertisement in this issue for further particulars.

AUGUST 27.—**Caerphilly.**—PREMISES.—Rebuilding premises known as the Armoury, Castle-street, Caerphilly. Plans, etc., can be seen, and quantities obtained, at the architect's offices, Wharton-street, Cardiff, and Underhill-chambers, Caerphilly. Mr. Sidney Williams, M.S.A., architect and surveyor.

AUGUST 27.—**Cheltenham.**—ALTERATIONS, ETC., TO PREMISES.—The Committee of the Gloucester Co-operative and Industrial Society, Ltd., invite tenders for alterations and additions at No. 91, High-street, Cheltenham. The drawings, etc., may be inspected at the office of the society's architect, Mr. Thomas Malvern, 21, Winchcombe-street, Cheltenham; also at the registered office of the society, Brunswick-road, Gloucester, during office hours.

AUGUST 27.—**Great Torrington.**—POLICE-STATION WORK. — The Standing Joint Committee of the County of Devon invite tenders for alterations at Great Torrington Police-station and the erection of a superintendent's house. The plans, etc., can be seen at the office of the County Surveyor, Mr. E. H. Harbottle, Queen-street, Exeter. Bills of quantities can be obtained from Mr. H. Michelmore, Clerk to the Committee, Castle of Exeter, on payment of 3*l.*

AUGUST 27.—**Llanedy.**—RENOVATION.—Tenders are invited for the renovation of Sardis Baptist Chapel, Llanedy. Plans, etc., may be inspected at Sardis House (adjoining Chapel).

AUGUST 27.—**Maryport.**—ALTERATION.—For works required in alteration to Central Stores, Maryport, for the Maryport Industrial Co-operative Society. Plans, etc., can be seen, and bills of quantities obtained, on application to Messrs. W. G. Scott & Co., architects and surveyors, 2, Park-lane, Workington.

* AUGUST 27. — **Winton.** — SCHOOLS.—The Bournemouth Education Committee invite tenders for new elementary schools in Sherborne-road, Winton. See advertisement in this issue for further particulars.

AUGUST 28. — **Batley, Wilton Park.** — GREENHOUSES.—Tenders invited for reconstructing and repairing greenhouses. For specification, etc., apply to Mr. C. J. Kirby, Borough Surveyor.

AUGUST 28. — **Holyhead.** — ADDITIONS, ETC., TO CHAPEL.—Alterations and additions to the Congregational Chapel, London-road, Holyhead. Plans, etc., may be seen at any time at No. 9, Lligwy-street, or at office of Mr. Jos. Owen, F.R.I.B.A., architect and surveyor, Exchange-chambers, Holyhead.

AUGUST 28.—**Randwick.**—ALTERATIONS, ETC.—For alterations and additions to Randwick Church Schools. Drawings, etc., may be seen, and form of tender obtained, on application to Mr. G. P. Milnes, A.M.Inst.C.E., architect, 6, Rowcroft, Stroud.

AUGUST 30. — **Belfast.** — MANSE.—Erection of a manse at Alliance-avenue, Oldpark, in connexion with the Oldpark Presbyterian Church. Plans, etc., may be seen at office of Messrs. Young & Mackenzie, Scottish Provident-buildings, Belfast.

AUGUST 30.—**Belfast.**—OFFICES.—The Directors of the Clyde Shipping Company, Ltd., invite tenders for the erection of new offices, Waring-street. Plans, etc., may be seen at the office of Messrs. Watt, Tulloch, & Fitzsimons, architects, 77a, Victoria-street, Belfast, and copies of the bills of quantities obtained from Messrs. W. H. Stephens & Son, Donegall-square North.

AUGUST 30.—**Queenstown.**—CONVENT SCHOOLS.—Erection of Queenstown Convent of Mercy new National Schools. The plans, etc., can be seen at the offices of the architect, Mr. Samuel F. Hynes, F.R.I.B.A., 5, South-mall, Cork. Forms of tender and bills of quantities will be supplied on deposit of 1*l.*

AUGUST 30.—**Taunton.**—REBUILDING WORKS.—Rebuilding of the King's Arms, North Town, Taunton, for Messrs. Starkey, Knight, & Co., Ltd. Plans, etc., may be seen at the office of the architect, Mr. George C. Strawbridge, 25, Alma-street, Taunton.

AUGUST 30.—**Worsley.**—OFFICES AND HALL.—The Worsley U.D.C. invite tenders for the labour and materials required in the erection of Public Offices and a Public Hall. Drawings may be seen, and bills of quantities obtained, at the office of the architect, Mr. J. T. Proffitt, 9, Longley-road, Walkden, on deposit of 2*l.* 2s.

AUGUST 31.—**Highampton.**—SCHOOL, ETC.—Devon County Education Committee invite tenders for a new school and offices at Highampton. The drawings, etc., may be seen (in duplicate) at the Rectory, Highampton, and at the architect's office, 1, Richmond-road, Exeter.

* AUGUST 31.—**Kingston-on-Thames.**—ADDITIONS TO LAUNDRY.—The Kingston Guardians invite tenders for additions to the Laundry drying-room. See advertisement in this issue for further particulars.

* SEPTEMBER 1.—**Homerton.**—ISOLATION ROOMS.—The Metropolitan Asylums Board invite tenders for construction of isolation rooms at the Eastern Fever Hospital. See advertisement in this issue for further particulars.

SEPTEMBER 1. — **Manchester.** — LAVATORY.—Manchester Corporation Sanitary Committee invite tenders for the construction of an underground lavatory for males at the Poultry Market, Shudehill, Manchester. Drawings may be seen, and specification, etc., obtained, at the office of the City Surveyor, Town Hall, Manchester, on payment to the City Treasurer of 1*l.* 1s. All cheques or postal orders are to be made payable to the order of the Corporation of Manchester.

SEPTEMBER 1. — **Penarth.** — CARETAKER'S HOUSE.—Penarth U.D.C. invite tenders for the erection of a caretaker's house in connexion with the Public Library, Penarth. Plans, etc., may be seen, and bills of quantities obtained (on payment of 1*l.* 1s.), on application to the architect, Mr. H. Snell, 13, Hickman-road, Penarth.

* SEPTEMBER 1.—**Plumstead.**—OPEN-AIR WARDS.—The Guardians of the Woolwich Union invite tenders for open-air wards at the Infirmary, Plumstead. See advertisement in this issue for further particulars.

SEPTEMBER 1. — **Rawtenstall.** — PUBLIC CONVENIENCES.—The Corporation of Rawtenstall invite tenders for the whole of the works and materials comprised in the construction and erection of public conveniences at Queen's-square, Rawtenstall. Plans may be seen, and forms of tender, etc., may be obtained, on application to Mr. James Johnson, C.E., Borough Surveyor, Municipal Offices, Rawtenstall, on payment of 1*l.* 1s.

SEPTEMBER 1.—**Rawtenstall.**—WATERFOOT MARKET HALL.—The Corporation of Rawtenstall invite tenders for the whole of the works and materials comprised in the construction and erection of a new Market Hall at Waterfoot. Plans may be seen, and forms of tender, etc., may be obtained, on application to Mr. James Johnson, C.E., Borough Surveyor, Municipal Offices, Rawtenstall, on payment of 2*l.* 2s.

SEPTEMBER 1.—**Winchester.**—CENTRAL HALL.—Erection of the Central Hall and other works, Peter Symonds' School, Winchester. The plans, etc., can be seen at the offices of the architects, Messrs. Chancellor & Hill, 12, Jewry-street, Winchester, from whom bills of quantities can be obtained.

* SEPTEMBER 2.—**Mansfield.**—COUNTY COURT ADDITIONS.—The Commissioners of H.M. Works and Public Buildings invite tenders for alterations and additions to Mansfield County Court. See advertisement in this issue for further particulars.

SEPTEMBER 3. — **Pembroke.** — ALTERATIONS.—For alterations and repairs at the Town Hall, Pembroke. Specifications, etc., can be seen at the Town Clerk's Office, Pembroke.

* SEPTEMBER 6.—**Royston.**—SCHOOL.—The Hertfordshire Education Committee invite tenders for erection of a school at Royston. See advertisement in this issue for further particulars.

SEPTEMBER 8.—**Burnley.**—NURSES' HOME, ETC.—For works in connexion with erection of a nurses' home and alterations of the Infirmary, Rakehead, Burnley, for the Guardians. Specifications, etc., may be obtained from the architects, Messrs. G. & S. Keighley, Nicholas-street, Burnley.

SEPTEMBER 8.—**London.**—REPAIRS AND PAINTING WORK at the Board's Offices, 45, Upper North-street, Poplar, E.—The Guardians invite tenders for the proposed works. Specification prepared by their architects, Messrs. J. & W. Clarkson, of 136, High-street, Poplar, E. A copy of the specification, etc.,

may be obtained upon payment to the architects of a deposit of 3*l.* 3s.

SEPTEMBER 11.—**Picklenash, Newent.**—HANDICRAFT, ETC., ROOM.—Gloucestershire Education Committee invite tenders for the erection of a handicraft and cookery room at Picklenash Council School, Newent. Particulars of the work may be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester, upon depositing the sum of 2*l.* 2s.

SEPTEMBER 14. — **Hartlepool.** — SCHOOL WORKS.—The C.C. of Durham invite tenders for extensions to the Hartlepool Henry Smith School in accordance with plans prepared by Mr. James Garry, architect, West Hartlepool, at whose offices the plans and specification may be seen. Bills of quantities may be obtained from Mr. J. A. L. Robson, Secretary for Higher Education, Shire Hall, Durham.

NO DATE.—**Alphington.**—COTTAGE RESIDENCE.—Erection of six cottages, residence, and business premises at Alphington, near Exeter. Names to Mr. J. Archibald Lucas, F.S.I., A.R.I.B.A., Guildhall-chambers, High-street, Exeter.

NO DATE.—**Chesterfield.**—ADDITIONS.—Extensive additions to Messrs. Eyre & Sons' business premises, Holywell-street, Chesterfield. Plans, etc., at the office of Mr. W. Cecil Jackson, M.S.A., architect and surveyor, 29, Knifesmith-gate, Chesterfield.

NO DATE.—**Ketton.**—LYCH GATE.—The P.C. invite tenders for the erection of a new oak lych gate to the Ketton Churchyard, and also for the rebuilding of the churchyard wall. Quantities may be obtained from the architect, Mr. H. F. Traylen, 16, Broad-street, Stamford, upon the receipt of 1*l.* 1s.

NO DATE. — **Leeds.** — HOUSES.—Erection of two houses in Stoneyrock-road, Leeds. Names to Mr. John E. Stocks, architect and surveyor, Greek-street-chambers, Park-row, Leeds.

NO DATE.—**Llanelly.**—REROOFING.—Reroofing and renovating portions of the Parish Church of Llanelly, Breconshire. Builders desirous of tendering to apply to the architect, Mr. J. Vaughan Richards, Estate Office, Crickhowell.

NO DATE. — **Llanfairfechan.**—CHAPEL, ETC.—Erection of a new chapel and schoolrooms at Llanfairfechan, for Horeb M.C. Names to Mr. Ll. Samuel, Winllan, Llanfairfechan.

NO DATE.—**Sneinton.**—RE-ERECTING, ETC.—For the removal, building of brick foundations, and re-erection of St. Christopher's temporary iron Church and Schools, at Sneinton. Particulars, etc., from Mr. F. E. Littler, architect, Lowndham, Notts.

NO DATE.—**South Elmsall.**—CHURCH.—Erection of a brick church, to hold 500, at South Elmsall. Appointments to view the site and plans, and to obtain quantities, must be made with the Rev. Arthur Gould, South Elmsall, Doncaster.

NO DATE. — **Trehafod.** — CHAPEL RENOVATIONS.—Renovations, etc., to the Siloam C.M. Chapel, Trehafod. Specifications, etc., can be seen, and all particulars obtained, from the architect, Mr. Philip J. Jones, Brynawel, Cilfynydd, Pontypridd.

NO DATE.—**Wakefield.**—STEEL FRAMED BUILDING.—The Wakefield and District Light Railway Company invite tenders for the supply and erection of steel framed building, 60 ft. by 40 ft., 20 ft. high. Copy of plans and particulars will be sent on application to Mr. H. England, General Manager, Belle Isle, Wakefield.

NO DATE. — **West Winch.** — HOUSE.—Tenders are invited for the erection of a house at West Winch. For full particulars apply Messrs. Wm. Jarvis & Son, Paradise-parade, Lynn.

ENGINEERING, IRON, AND STEEL.

AUGUST 23. — **Godmersham.** — BRIDGE WORKS.—East Ashford R.D.C. invite tenders for the pointing and repair of Ford Bridge, Godmersham. Specification can be seen at the office of Mr. T. W. Pullen, Surveyor, Kennington.

AUGUST 25. — **South Dublin.** — WELL-SINKING.—South Dublin R.D.C. invite tenders for sinking well's and providing pumps and appurtenances. The specifications may be inspected at the Council's Office, where schedules and forms of tender may be obtained.

AUGUST 27. — **Solihull.** — BOILERS, ETC. — The Guardians invite tenders for Lancashire boilers, mains and fittings, etc., at their Workhouse at Solihull. Firms tendering must take their own particulars of plans and specification at the office of the architects, Messrs. W. H. Ward, Paradise-street, Birmingham, between the hours of 10 a.m. and 5 p.m.

AUGUST 30. — **Uxbridge.** — PLANT. — Uxbridge U.D.C. invite tenders for the overhauling and putting into proper repair of the duplicate pumping plant at their Waterworks, Waterloo-road, Uxbridge. Mr. W. T. Harvey, Clerk to the Council, Council Offices, 126, High-street, Uxbridge.

AUGUST 31.—**Ryde.**—LINING, ETC., A WELL.—The Corporation of the Borough of Ryde invite tenders for making and lining a well, driving adits, and doing other work connected therewith at Knighton, Isle of Wight, in accordance with the drawings, etc., prepared by their consulting engineer, Mr. William Matthews, 39, Victoria-street, Westminster, S.W. The drawings may be inspected, and specifications, etc., obtained, upon application at the offices either of the Consulting Engineer or of the Borough Engineer, Town Hall, Ryde, upon payment of a deposit of 3*l.* 3s.

SEPTEMBER 1. — **Marlow.** — BRIDGE.—The County Councils of Berks and Bucks invite tenders for stripping and renewing the wooden decking to carriageway of Marlow Suspension Bridge (about 7,500 sq. ft.). Copies of specification, etc., can be obtained from Mr. R. J. Thomas, M.Inst.C.E., County Surveyor, Aylesbury, upon payment of a deposit of 2*l.* 2s.

SEPTEMBER 13.—**Croydon.**—BOILER.—The Guardians of the Poor of the Croydon Union invite tenders for the supply and erection of one Cornish boiler at the Croydon Union Infirmary, Mayday-road, Thornton Heath, Surrey; also the existing boiler to be removed. Copies of specification with forms of tender may be obtained on application to Mr. J. F. L. Crosland, Vulcan Boiler and General Insurance Company, Ltd., 67, King-street, Manchester.

SEPTEMBER 15.—**London.**—DREDGE.—The tenders are invited by the High Commissioner for New Zealand, on behalf of the Lyttelton Harbour Board, for the construction and delivery, in Port Lyttelton, New Zealand, of a 300-ton "Priestman" hopper dredge. Specification, sketch, plan, form of agreement, etc., are on view, and copies can be obtained by intending tenederers on application at the office of the High Commissioner, 13, Victoria-street, Westminster, London, S.W.

SEPTEMBER 15.—**Wallasey.**—PLANT.—The Wallasey U.D.C. invite tenders for tar extractor, rotary washer, rotary exhauster and engine, and Lancashire boiler, at the Gasworks, Poulton-cum-Seacombe. Plans may be inspected, and copies of specifications obtained, on application to the Engineer, Mr. J. H. Crowther, at his office, Dock-road, Seacombe.

SEPTEMBER 22.—**Leith Harbour and Docks.**—CONSTRUCTION OF GRAVING DOCK.—The Commissioners for the Harbour and Docks of Leith invite tenders for the construction of a graving dock and relative works at the north-west corner of the Imperial Dock, in conformity with drawings, etc., which may be seen at the office of the Engineer, Mr. Peter Whyte, M.Inst.C.E., Superintendent of the Harbour and Docks, Tower-place, Leith. Forms of tender, etc., may be obtained from the Engineer on payment of 3*l.* 3s.

MISCELLANEOUS.

AUGUST 23. — **Kingsclere.**—ROLLERS.—Kingsclere R.D.C. invite tenders for the hire of two 10-ton steam road rollers. Form of tender and particulars may be obtained at office of Mr. W. T. Jelfs, Surveyor, Kingsclere, Newbury.

AUGUST 24. — **Manchester.**—LABOUR.—Manchester Corporation Tramways Committee invite tenders for the supply of team labour required by the department during the period ending September 30, 1910. Forms of tender may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

AUGUST 24. — **Rhondda.** — FENCING.—Rhondda U.D.C. invite tenders for:—(1) About 360 yds. of strong, unclimbable, wrought-iron fencing, 6 ft. high, with gates, fixed complete at Gelli; (2) about 710 yds. ditto at Ferndale. Particulars may be obtained on application to Mr. W. J. Jones, Engineer and Surveyor, at the Council Offices, Pentre, Rhondda.

AUGUST 24. — **Rhondda.** — SCAVENGING.—Rhondda U.D.C. invite tenders for the scavenging of their District, in sections, for the term of one year. Specification, etc., may be obtained at the Surveyor's Department, Public Offices, Pentre, Rhondda.

AUGUST 24. — **South Molton.** — STEAM ROLLERS.—The South Molton R.D.C. invite tenders, at per roller, for the hire of not exceeding four steam rollers. Mr. Fred Day, Clerk to the Council, South Molton.

AUGUST 25. — **Felling.**—FENCING.—The U.D.C. of Felling invite tenders for the erection of a boundary fence and gates and the laying on of water to the centre of land for allotments at Felling. Plans, etc., may be seen at the office of the Surveyor, Council Buildings, Felling.

AUGUST 30. — **Tunstall.**—SCAVENGING.—Tunstall U.D.C. invite contracts for the removal of nightsoil and ashes and for team work. Full details and forms of tender may be had upon application to the Surveyor, the Scavenging Superintendent, or Mr. Arthur P. Llewellyn, Clerk to the Council, Clerk's Offices, Tunstall.

AUGUST 31.—**Dublin.**—ELECTRIC WATER SPRINKLING CAR.—The Cleansing Committee of the Corporation of Dublin invite tenders for the supply of one electric water sprinkling car, fitted with electrically-driven air compressor or Roturbo pump. Specification, etc., may be inspected at office of Mr. Fred. J. Allan, Secretary, Cleansing Committee, 3, Cork-hill, and may be obtained on payment of 1*l.* 1s.

AUGUST 31. — **Margate.**—TURF.—Tenders are invited for the supply and delivery of 8,000 sq. yds. of good turf for the Park and greens in the Borough, and of an additional 2,000 yds. at the option of the Council. Mr. Edward Brooke, Town Clerk, Town Clerk's Office, 13, Grosvenor-place, Margate.

AUGUST 31. — **Oldham.**—TIMBER.—Oldham Education Committee invite tenders for the supply of timber for the several manual instruction centres. Forms of tender may be obtained of Mr. J. Rennie, Secretary for Education, Education Offices.

AUGUST 31. — **Ticehurst.** — ROAD ROLLING.—Ticehurst R.D.C. invite tenders for steam rolling. Forms of tender may be obtained from Mr. W. N. Wood, Surveyor, Ticehurst, on a stamped addressed foolscap envelope being forwarded.

SEPTEMBER 1. — **Littlehampton.** — SCARIFYING.—Littlehampton U.D.C. invite tenders for scarifying and steam-rolling of roads about the District. Forms of tender can be obtained on application to the Council's Surveyor, Mr. H. Howard, F.S.I., Town Offices.

SEPTEMBER 1. — **Liversedge.** — WROUGHT-IRON FENCING.—Liversedge U.D.C. invite tenders for the supply and delivery of approximately 160 yds. of wrought-iron fencing and gates, to be erected on Mark-street improvement. Plans, etc., may be seen, and form of tender obtained, at office of Mr. Frank Langley, Engineer and Surveyor, Council Offices, Liversedge.

SEPTEMBER 11.—**Castle Bromwich.**—SCAVENGING.—The R.D.C. of Castle Bromwich invite tenders to cleanse all earth closets, privies, and ashpits in the Parish. Particulars of the work may be obtained, and forms of contract seen, by application to Mr. T. H. Negus, Surveyor to the Council, 32, Arthur-road, Erdington.

SEPTEMBER 13. — **Stansted.** — SCAVENGING.—The Stansted P.C. invite tenders for scavenging a portion of the Parish. For further particulars apply to Mr. E. T. Watts, Surveyor, Thorley, Bishop's Stortford.

NO DATE.—**Halifax.**—PAREING AND BURNING.—Tenders wanted for pareing and burning 6 or 7 acres of land. Mr. J. Lister, Shibden Hall, Halifax.

PAINTING, etc.

AUGUST 23. — **Bristol.** — PAINTING.—Painting, etc., at the able-bodied women's block, at Eastville Workhouse, in accordance with the specification, which is deposited for inspection. Form can be obtained at office of Mr. J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital.

AUGUST 24. — **Handsworth.** — PAINTING.—The U.D.C. invite tenders for painting outside work at the Council House, Soho-road, Handsworth. All particulars may be obtained on application to Mr. H. Richardson, A.M.Inst.C.E., Surveyor to the Council.

AUGUST 24. — **Heath Charnock.** — PAINTING.—Chorley Joint Hospital Board invite tenders for painting, etc., required at the Isolation Hospital, Heath Charnock. Mr. B. Stanton, Clerk, 14, High-street, Chorley.

AUGUST 24.—**Romford.**—PAINTING.—Romford Joint Hospital Board invite tenders for painting the whole of the outside wood and iron work of all the buildings at the Isolation Hospital, situate at Rush Green, Romford. Specification, etc., may be obtained by forwarding a stamped addressed foolscap envelope to Mr. William Smith, Clerk to the Board, 13, North-street, Romford.

AUGUST 25.—**Morley.**—PAINTING.—For painting of the greenhouses, etc., at the Dartmouth Park. Particulars may be obtained on application at the office of Mr. W. E. Putman, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Morley.

AUGUST 26. — **Dewsbury.** — PAINTING. — The Guardians require tenders for colour-washing and whitewashing the inside and painting the outside of the Cottage Homes, Healds-road, Dewsbury. For specifications, etc., apply to the Master at the Workhouse.

AUGUST 27.—**Salford.**—PAINTING.—Tenders are invited for painting two bridges over the River Irwell. The specification and forms of tender, etc., may be obtained at the Borough Engineer's Office, Town Hall, Salford.

AUGUST 30.—**Blackrock.**—PAINTING.—The U.D.C. of Blackrock invite tenders for the following work:—(1) Painting the railings in front of Town Hall, the windows and doors of Town Hall, Technical School, and Library; (2) painting inside woodwork of motor house; (3) painting No. 2 fire escape. Specifications can be seen at office of Mr. R. Finlay Heron, Town Clerk, Town Hall, Blackrock, Co. Dublin.

✱ SEPTEMBER 1.—**Holborn.**—PAINTING BRIDGE.—The Streets Committee of the Corporation of London invite tenders for painting and regilding the Farringdon-street and Shoe-lane Bridge. See advertisement in this issue for further particulars.

✱ SEPTEMBER 8.—**Poplar.**—REPAIRS AND PAINTING.—The Poplar Guardians invite tenders for repairs and painting at the Board's Offices, 45, Upper North-street, Poplar. See advertisement in this issue for further particulars.

NO DATE. — **Devonport.** — DECORATION.—Interior decoration of St. John the Baptist Church, Devonport. Particulars and specification from Mr. Edgar M. Leest, architect, 14, St. Aubyn-street, Devonport, on deposit of 2*l.* 2s.

ROADS, SANITARY, AND WATER WORKS.

AUGUST 23. — **Blackburn.** — ROAD WORKS.—For street works, Railway-grove, Kingston-place, and the back roads behind; also macadamising Gorse-road and Mavis-road, for the Highway Committee. Plans, etc., may be seen, and information obtained, upon application at the office of Mr. William Stubbs, Borough Engineer, Municipal Offices, Blackburn.

AUGUST 24.—**Barnoldswick.**—STREET WORKS.—For the excavating, surface-water sewering, levelling, etc., and making good portions of Valley-road, Calf Hall-road, and Peter-street, for the U.D.C. Plans, etc., may be seen, and bills of quantities, etc., obtained from Mr. W. Bennet, M.Inst.M.E., Engineer and Surveyor, Town Hall, Barnoldswick, upon payment of a deposit of 10s.

AUGUST 24. — **Gateshead.**—PAVING.—Tenders are invited for paving, etc., streets. Plans, etc., may be seen, and quantities obtained, at the office of Mr. N. P. Pattinson, Borough Surveyor, Town Hall, Gateshead.

AUGUST 25.—**Portgordon Harbour.**—REMOVAL OF SHINGLE.—Estimates are invited for the removal of about 1,600 cubic yds. of shingle from the entrance to harbour. Mr. J. H. Munro, Inspector of Works, Temperance Hotel, Portgordon, will point out the shingle which requires to be removed, and where it may be deposited.

AUGUST 25. — **Welwyn.**—SEWER.—Welwyn R.D.C. invite tenders for providing and laying new sewer in the London-road, Welwyn, Herts. Plan, etc., may be seen, and bills of quantities and forms of tender obtained, at the offices of Mr. Henry F. Mence, Surveyor, 11, St. Peter's-street, St. Albans, on payment of 1*l.* 1s.

AUGUST 26.—**Doveholes.**—SERVICE TANK.—For a small concrete service tank and other work at Doveroles, near Buxton, for the Chapel-en-le-Frith R.D.C. Plan, etc., may be seen, and quantities, etc., obtained, upon application to the Council's Engineers, Messrs. Swann & Brady, Town Hall, Chapel-en-le-Frith.

AUGUST 26.—**Liskeard.**—SEWER.—Liskeard R.D.C. invite tenders for laying about 100 ft. of 9-in. stoneware pipe sewer at Bodinnick, Lanteglos. Mr. E. Mallett, Pendruffle, Duloe, R.S.O.

AUGUST 26. — **Sancreed.**—EXTENSION OF CHURCHYARD.—Tenders are invited for works in connexion with the extension of the churchyard at Sancreed. Plans, etc., may be seen at the office of Mr. Henry Maddern, architect, 4, Morrab-road, Penzance.

✱ AUGUST 26. — **Snargate.**—MACHINERY, ENGINE-HOUSE, WELLS, AND CULVERTS.—The Commissioners of Sewers for the Level of Walland Marsh and Elderton's Innings invite tenders for the above, to be erected near Woodruff's Sluice, Snargate, Dover. See advertisement in this issue for further particulars.

AUGUST 27.—**Salford.**—ASPHALTING.—Tenders are invited for asphalting the girders of two bridges over the River Irwell. The specification, etc., may be obtained at the Borough Engineer's Office, Town Hall, Salford.

AUGUST 28. — **Leeds.**—EXTENSION OF LAWNSWOOD CEMETERY, ADEL, LEEDS.—Names to Mr. W. S. Braithwaite, architect and surveyor, 6, South-parade, Leeds.

AUGUST 28. — **Newbiggen and Thoralby.** — WATER SUPPLY.—Aysgarth R.D.C. invite tenders for the supplying and laying of about 3,000 yds. of cast-iron water pipes, together with valves and other fittings; also the construction of a service reservoir. Plans, etc., may be seen on application to Mr. R. Blades, Sanitary Inspector, Aysgarth. Schedule of quantities may be had on the payment of 2*l.* 2s.

AUGUST 30.—**Bristol.**—SEWER, ETC.—The Sanitary and Improvement Committee of the Corporation invite tenders for the following works:—Reconstruction of brick sewer, Stapleton-road; piling bank of River Avon, Netham. The drawings, etc., may be seen at 63, Queen-square, and copies of the bills of quantities obtained, on deposit of 1*l.* 1s. for each set. Mr. Thos. Henry Yabbicom, M.Inst.C.E., City Engineer and Surveyor, offices, 63, Queen-square, Bristol.

AUGUST 30. — **Middleton.**—SEWERING.—The Corporation of Middleton invite tenders for the sewering to be done in Hollin-lane. Plans may be seen, and specifications, etc., obtained from Mr. Welburn, Borough Surveyor, Middleton.

AUGUST 30.—**Penge.**—PRIVATE STREET WORKS.—The U.D.C. of Penge invite tenders for private street works in Clevedon and Royston roads. Plans, etc., may be seen, and copies of the bills of quantities, etc., obtained, on application to the Council's Surveyor at the Town Hall, Anerley-road, S.E., on payment of a deposit of 2*l.*

AUGUST 30. — **Pontypridd.** — STREET WORKS.—Pontypridd U.D.C. invite tenders for carrying out of private street works:—Contract No. 1.—Fountain-street, Trehafod. Contract No. 2.—Lane at the rear of Barry-terrace, Pwllgwaun. Contract No. 3.—Seaton-street, Pwllgwaun. Contract No. 4.—Lane at the rear of Berw-road. Plans, etc., may be seen, and forms of tender obtained, on application at the office of Mr. W. E. Lowe, Engineer and Surveyor, upon receipt by Mr. J. Colenso Jones, Clerk to the Council, Municipal Buildings, Pontypridd, of a deposit of 1*l.* 1s. in respect of each contract.

AUGUST 31. — **Waterloo-with-Seaforth.**—ROAD WORKS.—The U.D.C. of Waterloo-with-Seaforth invite tenders for works of sewering, paving, flagging, kerbing, channelling, etc. Plans, etc., may be seen, and bills of quantities obtained, on application to Mr. F. Spencer Yates, A.M.Inst.C.E., the Surveyor to the Council, at the Town Hall, Waterloo. The sum of 10s. 6d. must be deposited for quantities.

SEPTEMBER 1. — **Hove.** — MAKING-UP.—Making-up roadway and forming paths in Portland-road (between School-road and Grange-road). Further particulars may be obtained, and plan, etc., seen, at the office of the Borough Surveyor, Mr. H. H. Scott.

SEPTEMBER 1.—**Portsmouth.**—CISTERNS, ETC.—Tenders are invited for supplying and fixing cisterns to water-closets, with necessary lead piping and such other work and materials. The schedule and form of tender may be obtained at the Medical Officer of Health's Office at the Town Hall.

SEPTEMBER 2. — **Upwey (Portland).**—BOREHOLE.—For sinking a 6-in. borehole in the Portesham Valley, Upwey, for Portland U.D.C. Plans may be seen, and copies of the specification, etc., obtained, at the office of Mr. R. Stevenson Henshaw, Engineer and Surveyor, Council Offices, New-road, Portland.

SEPTEMBER 7. — **Castle Ward.** — MAKING-UP.—The R.D.C. invite tenders for the making-up of three private streets at Dinnington Colliery. Plans, etc., may be seen, and copies of the quantities and forms of tender, etc., obtained, on application to Mr. James Jameson, Sanitary Surveyor, Fernlea, Ponteland. A deposit of 1*l.* 1s. will be required for each set of quantities taken out.

SEPTEMBER 7.—**Leith.**—STREET WORKS.—The Provost, Magistrates, and Councillors invite tenders for the following works, viz.:—(1) Laying about 2,900 super yds. of 4-in. granite or whinstone cubes at Dalmeny street, Sloan-street, and James Place-lane; (2) laying about 2,150 super. yds. of cement concrete carriageway in Craighall-terrace, Claremont-gardens, and Seafield-street; (3) laying about 990 super. yds. of cement concrete pavement in Craighall terrace, Seafield-street, James Place-lane, Sloan-street, and Dalmeny-street. Plans, etc., may be seen, and information obtained, at the Burgh Surveyor's Office, Charlotte-street, Leith.

* SEPTEMBER 8. — **London.** — URINALS. — The Commissioners of H.M. Works, etc., invite tenders for supply of urinals for a period of three years. See advertisement in this issue for further particulars.

* SEPTEMBER 13. — **Wandsworth.** — MAKING-UP AND PAVING.—The Wandsworth B.C. invite tenders for making-up and paving of Pulborough-road, Southfield. See advertisement in this issue for further particulars.

SEPTEMBER 13. — **Watford.**—MAKING-UP.—Watford U.D.C. invite tenders for making-up roads. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. D. Waterhouse, Surveyor.

SEPTEMBER 29.—**Wood Green.**—WORKS OF PRIVATE STREET IMPROVEMENT.—The U.D.C. invite tenders for works of private street improvement in Brabant-road, Ellenborough-road (Sec. II.), Windermere-road (Sec. II.), and Sandford-avenue. The plans, etc., may be seen, and bills of quantities obtained, on application to the Surveyor at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

* NO DATE. — **Mile End.** — TAR PAVING. — The Guardians of Mile End Old Town invite tenders for tar paving tennis court at the Bancroft-road Infirmary. See advertisement in this issue for further particulars.

STONES, MATERIAL, AND STORES.

AUGUST 23. — **Rochford.**—STONE, ETC.—Rochford R.D.C. invite tenders for the supply of secondhand York or other stone, or artificial or concrete slabs. Mr. Frederic Gregson, Clerk, Southend-on-Sea.

AUGUST 25. — **London.** — PAINTS, ETC.—The East Indian Railway Company invite tenders for the supply and delivery of (1) red and white lead, (2) paints, etc., as per specifications to be seen at the offices of Mr. C. W. Young, Secretary, Nicholas-lane, London, E.C. For each specification a fee of 1*l.* 1s. is charged, which cannot under any circumstances be returned.

AUGUST 26. — **Woking.** — ROAD MATERIAL.—The U.D.C. of Woking invite tenders for the supply of about 2,000 tons of granite. Forms of tender may be obtained from Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

AUGUST 27. — **Durham.** — MATERIALS. — Durham County Lunatic Asylum Visiting Committee invite tenders for supplying the Asylum with articles. Forms and conditions of tender may be had on application at the office of the Steward, at the Asylum.

AUGUST 30.—**Molesey.**—GRANITE.—The U.D.C. of East and West Molesey invite tenders for the supply and delivery of British granite. Specification, etc., may be obtained upon application to the Surveyor, D.C. Offices, East Molesey.

AUGUST 31. — **Wakefield.**—MATERIALS.—Wakefield and District Light Railway Company invite tenders for the supply of 1,000 tons of 6-in. by 3-in. first quality dressed non-slippery granite setts; 350 tons best quality dressed 5-in. by 3-in. whinstone or hard granite setts.

AUGUST 31. — **Walton-upon-Thames.** — ROAD MATERIAL.—The U.D.C. invite tenders for the supply and delivery of road material. Form of tender and conditions may be obtained on application to Mr. R. Wilds, Surveyor, Council Offices, Walton-on-Thames.

SEPTEMBER 1. — **Clacton.**—FLINTS.—Clacton U.D.C. invite tenders for the supply of 1,200 yds. of flints. Specification etc., may be obtained upon application to Mr. A. R. Robinson, Surveyor to the Council, Town Hall, Clacton-on-Sea.

SEPTEMBER 1. — **Littlehampton.**—FLINTS.—Littlehampton U.D.C. invite tenders for the supply and delivery, free, of 500 cubic yds. of clean hand-picked land flints. Forms of tender can be obtained on application to the Council's Surveyor, Mr. H. Howard, F.S.I., Town Offices.

SEPTEMBER 2. — **West Ham.** — SUPPLIES. — The Guardians invite tenders for the supply of articles to their Workhouse and Infirmary. Printed form may be obtained on application, or will be forwarded on receipt of a stamped addressed brief-sized envelope. Mr. Thomas Smith, Clerk, Clerk's Office, Board-room, Union-road, Leytonstone, N.E.

SEPTEMBER 6. — **Seaford.** — BROKEN GRANITE.—The Seaford U.D.C. invite tenders for the supply of 700 tons of small machine broken Guernsey granite 1-in. to 1½-in. gauge. Form of tender may be obtained from the Surveyor.

SEPTEMBER 7. — **Leatherhead.** — MATERIALS, ETC.—The U.D.C. of Leatherhead invite tenders for the supply of materials and labour. Specification, etc., can be obtained at the office of Mr. J. E. Smales, Surveyor, Council Offices, Leatherhead.

SEPTEMBER 8. — **Weymouth and Melcombe Regis.**—MATERIALS.—The T.C. of the Borough of Weymouth and Melcombe Regis invite tenders for materials. Particulars, etc., can be obtained on application to the Town Clerk, Municipal Offices, Weymouth. Each application must be accompanied with a fee of 1*l.* 1s.

SEPTEMBER 13. — **Watford.**—MATERIALS.—Watford U.D.C. invite tenders, together with samples, for the delivery at Watford Station of about 2,115 super. yds. of 2-in. granite concrete paving slabs. Forms of tender may be obtained from Mr. D. Waterhouse, Engineer, Council Offices, Watford.

SEPTEMBER 16.—**Bradford.**—STORES.—The Gas Committee of the Bradford Corporation invite tenders for the supply of stores. Form of tender may be had on application to Mr. Chas. Wood, Gas Engineer, Town Hall, and samples may be seen at Mill-street Gasworks.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF THE WORKS	Banbury Boro' Council.....	Not stated	Aug. 27

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sims	Aug. 25
*PREMS., MCHNRY., AND STK. OF BLDRS'. MERCHANTS, PLYMOUTH.—On the Premises	Alfred Parkhouse.....	Aug. 26

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	6	6	per 1000	alongside, in river.
Picked Stocks for Facings	2	10	0	,,	delivered
Flettons.....	1	4	6	,,	at railway depôt.
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing..	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire ...	3	15	0	,,	,, ,,
Do. Bullnose	4	0	0	,,	,, ,,
Best Stourbridge Fire Bricks	3	14	0	,,	,, ,,
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers.....	10	7	6	,,	,, ,,

BRICKS, &c. (*continued*).

	£	s.	d.			
Headers	9	17	6	per 1000,	deld. at rly. depôt.	
Quoins, Bullnose, and Flats	13	17	6	,,	,,	,,
Double Stretchers	15	17	6	,,	,,	,,
Double Headers...	12	17	6	,,	,,	,,
One Side and two Ends	16	17	6	,,	,,	,,
Two Sides and one End.....	17	17	6	,,	,,	,,
Splays and Squints	15	7	6	,,	,,	,,
Best Dipped Salt Glazed Stretchers	10	7	6	,,	,,	,,
Headers.....	9	17	6	,,	,,	,,
Quoins, Bullnose, and Flats	13	17	6	,,	,,	,,
Double Stretchers	15	17	6	,,	,,	,,
Double Headers...	12	17	6	,,	,,	,,
One Side and two Ends	16	17	6	,,	,,	,,
Two Sides and one End.....	17	17	6	,,	,,	,,
Splays and Squints	15	7	6	,,	,,	,,
Second Quality White and Dipped Salt Glazed	1	5	0	,,	less than best.	

BRICKS, &c. (*continued*).

	s.	d.		
Thames and Pit Sand	6	6	per yard,	delivered.
Thames Ballast	5	0	,,	,,
Best Portland Cement.....	28	0	per ton,	,,
Best Ground Blue Lias Lime	19	0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt.....	1	6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt.....	1	8½	,,	,,
PORTLAND STONE (20 ft. average)—				
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,,	,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,,	,,
Ancaster in blocks	1	10	per ft. cube	deld. rly dep.
Beer ,, ...	1	6	,,	,,
Greenshill ,, ...	1	10	,,	,,

STONE (*continued*).

	s.	d.	
Darley Dale in blocks ...	2	4	per ft. cube, deld. rly. depôt.
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks.	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "

HARD YORK—

Scappled random blocks.	3	0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green ...	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles...	42	0	per 1000, at rly. depôt.
Hip and Valley tiles ...	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles ...	4	0	per doz. "
Best Ruabon red, brown, or bridled do. (Edwards) ...	57	6	per 1000 "
Do. Ornamental do.....	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles.....	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles.....	48	0	per 1000 "
Best Ornamental tiles.....	50	0	" "
Hip tiles.....	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced.....	50	0	per 1000 "
Do. pressed.....	47	6	" "
Do. Ornamental do.....	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced ...	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard.					
	£	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6 ...	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in. ...	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in. ...	8	10	0	9	10	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft.					
	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.).....	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard.					
	£	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0
3 in. by 9 in.....	22	0	0	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
3 in. by 9 in.....	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.....	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard.					
	£	s.	d.	£	s.	d.
Petersburg: Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	0
Pitch-pine: deals	18	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube...	0	3	6	0	5	0
Danzig and Stettin Oak logs—						
Large, per ft. cube	0	3	0	0	3	9
Small " "	0	2	6	0	2	6
Wainscot Oak Logs, per ft. cube...	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch.....	0	0	8½	0	0	9½
¼ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch ...	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot.....	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched.....	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched.....	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched.....	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¾ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.					
	£	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	12	0	0
Angles, Tees, and Channels, ordinary sections.....	9	0	0	10	0	0
Flitch Plates.....	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns.....	7	10	0	8	10	0

METALS.

	Per ton, in London.					
	£	s.	d.	£	s.	d.
IRON—						
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars" ...	10	10	0	...		—
Mild Steel Bars.....	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised.....	17	0	0	...		—
(*And upwards, according to size and gauge.*)						
Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0	...		—
" " 24 g.	10	15	0	...		—
" " 26 g.	12	5	0	...		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	...		—
Ordinary sizes to 22 g. and 24 g.	15	10	0	...		—
" " 26 g.	16	10	0	...		—
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0	...		—
" " 22 g. and 24 g.	18	10	0	...		—
" " 26 g.	20	0	0	...		—
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...		—
" " 22 g. and 24 g.	14	15	0	...		—
" " 26 g.	16	5	0	...		—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	...		—
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...		—
" " " 26 g.....	15	0	0	...		—
Cut Nails, 3 in. to 6 in.....	10	10	0	11	0	0
(Under 3 in., usual trade extras.)						

LEAD, &c.

	Per ton, in London.					
	£	s.	d.	£	s.	d.
LEAD—Sheet, English, 3lb. and up.	16	0	0	...		—
Pipe in coils	16	10	0	...		—
Soil pipe.....	18	10	0	...		—
Compo pipe	19	10	0	...		—
ZINC—Sheet—						
Vielle Montagne	£6	10	0	...		—
Silesian	26	5	0	...		—
COPPER—						
Strong sheet .....per lb.	0	1	0	...		—
Thin " ..... "	0	1	1	...		—
Copper nails ..... "	0	0	10	...		—
Copper wire ..... "	0	0	10	...		—
BRASS—						
Strong Sheet ..... "	0	0	11	...		—
Thin " ..... "	0	1	0	...		—
TIN—English Ingots..... "	0	1	5	...		—
SOLDER—Plumbers' ..... "	0	0	7	...		—
Tinmen's ..... "	0	0	6½	...		—
Blowpipe ..... "	0	1	0	...		—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds.....	2½d.	per ft. delivered.
" fourths	1½d.	" "
21 oz. thirds	3d.	" "
" fourths	2½d.	" "
26 oz. thirds	4d.	" "
" fourths	3d.	" "
32 oz. thirds	4½d	" "
" fourths	4½d.	" "
Flute Sheet, 15 oz	3½d.	" "
" 21 oz.....	4½d.	" "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d.	per ft. delivered.
⅛ "	2⅝d.	" "
⅛ "	2⅝d.	" "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d.	" "
" " tinted ...	5d.	" "

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	2
" " " in barrels	"	0	2	3
" " " in drums.....	"	0	2	6
Boiled " " in barrels.....	"	0	2	6
" " " in drums.....	"	0	2	9
Turpentine in barrels.....	"	0	2	11
" in drums	"	0	3	1
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak.....	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak.....	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish.....	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper.....	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain.....	0	9	0
Brunswick Black.....	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish.....	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABERSYCHAN.—For erecting new stables, office, etc., for the Abersychan British and Talywain Industrial Co-operative Society, Ltd. Mr. A. Gordon Babbidge, architect and surveyor, Clarence-chambers, Pontypool:—

R. Meara.....	£475 10	Gregory Bros.....	£398 0
W. Branch	420 10	Powell Bros.,	
A. & J. Richards..	418 0	Pontypool*	385 10

BELVEDERE.—For erecting a porter's lodge at Erith Sanatorium, Little Heath, for the Urban District Council, Erith:—

L. Lown & Co.	£428 18 11	H. E. Chandler	£367 0 0
Pasterfield & English	398 0 0	Hyde & Co....	359 0 0
W. Shurmur & Sons, Ltd. ..	396 0 0	G. H. Gunning & Sons	358 0 0
J. T. Jarvis & Sons.....	395 0 0	E. Pavitt & Sons	355 0 0
Jones & Andrews	375 0 0	Friday & Ling, Northend Works,	
F. Finnecy....	370 0 0	Erith*.....	340 0 0

BIRKENHEAD.—For alterations and additions to the bakery at the Union Workhouse, for the Guardians. Messrs. E. Kirby & Sons, architects, 5, Cook-street, Liverpool:—

P. Rothwell, Conway-street, Birkenhead†.. £905

BLOXWICH.—For alterations, additions, and renovations to music-hall, for the Corporation of Walsall. Quantities by Mr. John Taylor, Borough Surveyor, Walsall:—

J. & F. Wootton, Bloxwich* £467

CULWORTH (Northamptonshire).—For additions to school. Messrs. Law & Harris, architects, 1, Sheep-street, Northampton:—

A. Bird	£1,425 0	A. P. Hawtin ..	£960 0
W. J. Bloxham..	1,134 0	H. Martin	942 0
R. Gosford	1,063 0	G. F. Sharman..	936 0
Beardsmore & West	1,020 0	G. E. Stanton ..	925 19
F. G. Watson ..	999 0	E. D. Sharman & Son.....	923 15
T. Higgs	998 0	E. Green, Northampton*	898 0
T. Heath	997 0	A. J. Chown	860 0
T. Hickman	972 8		

LANCHESTER.—For alterations to sewage disposal works, Cornsay Colliery, for the Rural District Council. Mr. J. R. Lupton, Surveyor, Lanchester:—

G. T. Storey, Cornsay Colliery, Durham* .. £36

[Exclusive of the distributors.]

LUDDENDEN FOOT.—For paving, etc., part of Todmorden, Halifax, and Burnley main road, for the Urban District Council. Mr. F. Clayton, Surveyor, Council Offices, Luddenden Foot:—

J. Green & Sons, Burnley* £240 0 2

GRANGE-OVER-SANDS.—For Cartmel Valley water scheme, for the Urban District Council. Mr. Thos. Huddleston, Engineer and Surveyor, Council Offices, Grange-over-Sands:—

O. Wright & Co.	£5,373 11 4
Reid Bros.	3,483 0 3
A. E. Munn & Co.	3,461 5 4
P. Robinson	3,339 8 5
P. D. Hayes & Sons	3,233 3 6
F. Mitchell & Son	3,122 10 3
R. C. Brebner & Co.	3,106 10 11
A. Graham & Sons	3,099 0 0
W. Brigg	3,036 11 0
Worthington's, Ltd.	3,027 18 10
W. P. Meikle	2,941 3 10
J. H. Keith	2,872 0 10
G. Vickers	2,833 11 10
Jowett Bros.	2,768 1 6
T. C. Starkey	2,739 3 9
Davies, Ball, & Co.	2,737 19 10
Etheridge & Clark	2,714 6 7
C. Bushby & Sons	2,705 19 2
T. W. Rigby	2,697 2 5
A. Blair	2,685 12 8
Wickstead & Beardsell	2,606 1 0
W. H. Greenep	2,455 10 1

Labour in Trenching and Laying and Jointing Pipes, also Carting.

S. Frith	£1,130 4 9
I. Dean & Co.	976 19 2
B. Birch	673 7 6
R. Shuttleworth	850 14 11
W. Watson	612 14 8
T. Egan & Sons, Manningham*	491 0 2

Pipes and Fittings only.

Wilson's & Union Tube Co.	£2,208 10 5
J. Spencer, Ltd.	2,138 13 2
British Mannesmann Tube Co., London*	1,863 10 1
Stewarts & Lloyds	1,610 0 0
W. J. Graham	1,498 11 0
G. Schultz & Co.	1,375 0 0

Valves, Hydrants, etc.

Stewarts & Lloyds	£115 9 0
J. Blakeborough & Sons, Brighouse*	87 13 0
T. Egan & Sons	87 0 0
F. Hargreaves & Co.	74 15 0
J. Lees & Sons, Ltd.	72 4 0

MERTHYR TYDFIL.—For erecting boundary walls, to the Council School, for the Education Department. Quantities by Surveyor:—

D. Jones, Dowlais* £487

NEWPORT (Mon.).—For erecting higher elementary schools, with cookery centre, etc., at Stow Hill, for the Education Committee. Mr. Chas. T. Ward, architect, Town Hall, Newport. Quantities by architect:—

T. F. Howells	£25,944 12 8
A. J. Colborne	20,839 14 9
D. Davies & Sons	20,805 0 0
J. Jenkins, Ltd.	19,675 0 0
C. H. Reed	19,625 0 0
W. E. Blake	19,450 0 0
R. W. Moon, Newport*	19,197 0 0
J. Charles	18,984 0 0

PUTFORD.—For a mistress's house and other work at the West and East Putford Council School, for Devon County Education Committee. Mr. Percy Morris, Architect, 1, Richmond-road, Exeter:—

W. E. Bennett	£791 0	Carter & Morrish, Barnstaple*	£608 10
Ridge & Shute	750 15		

SHEFFIELD.—For timber dressing-shed, etc., at the Rivelin Valley Bathing Pool, for the Health Committee of the City Council:—

Badger & Appleby, South View-road, Sheffield* £235

WINDSOR.—For pulling down old Theatre Royal, etc., Thames-street, Windsor, for Sir William Shipley, J.P. Mr. Harry St. J. L. Percival, architect and surveyor, 47, Mortimer-street, Cavendish-square, W.:—

N. Wise	£437 10	J. Watson	£297 0
Hollis & Sons	365 0	Dunkley	290 0
J. Dovey	350 0		

WOOLFAR-DISWORTHY.—For enlargement, etc., of Woolfar-Disworthy West Council School, for the Devon County Education Committee. Mr. Percy Morris, Architect, 1, Richmond-road, Exeter:—

W. E. Bennett	£645 18 6	Carter & Morrish, Barnstaple*	£436 10 0
Ridge & Shute	557 0 0		

WORKSOP.—For constructing an open-air swimming bath in Prior Well-road, for the Urban District Council. Mr. G. Rawson, Surveyor, Town Hall, Worksop:—

A. Chadwick, Worksop* £1,550

[Six other tenders ranging from £1,665 to £2,061 11s. 8d.]

WORLINGTON.—For erecting a new two-arch bridge over the Little Dart River, for South Molton Rural District Council. Mr. W. S. Gardner, Surveyor, Chittlehampton:—

H. Berry	£550 0
F. Woolaway	512 10

ULVERSTON.—For Cartmel district water supply, for the Rural District Council. Mr. W. F. Y. Molineux, Engineer, Town Hall, Ulverston:—

Cast-iron Pipes.

A. E. Nunn & Co.	£1,157 19 0
J. McEwan & Co.	1,151 0 0
Cochrane & Co.	1,070 1 5
Halwell Iron Co.	1,057 15 4
Stanton Iron Co.	1,052 11 11
Etheridge & Clarke	1,052 11 10
J. Oakes & Co.	1,047 18 6
Sheepbridge Coal and Iron Co.	1,043 15 0
Clay Cross Iron Co.	1,031 18 2
Staveley Iron Co.*	1,021 15 8
D. Y. Stewart & Co. (per ton)	5 14 0

Valves and Fittings.

Hayward, Tyler, & Co.	£285 15 2
A. E. Nunn & Co.	222 9 7
Davies, Ball, & Co.	220 5 6
W. Farrar, Ltd.	215 0 0
Guest & Chrimes	214 13 10
Glenfield & Kennedy, Ltd. (Siemen's Meters)	210 7 0
Blakeborough & Co.*	193 4 0
Hamilton, Woods, & Co.	192 2 9
J. Lees & Co.	158 1 6

Pipe-laying and Carting.—Broughton East.

P. Robinson	£499 3 4	T. Iddon	£304 15 10
A. E. Nunn & Co.	454 15 0	T. Dirkin	288 7 6
A. J. Blair	416 15 0	J. Lourie	273 15 0
P. W. Hayes & Sons	376 4 2	G. Carruthers	271 0 8
A. Jackson	368 5 0	Egan & Sons	254 10 0
A. Graham & Sons	364 0 0	G. Wilson	250 12 0
T. W. Rigby	338 18 6	B. Birch	249 6 8
		R. Shuttleworth*	240 6 10

	Cartmel.			*Cark and Flookburgh.*		
G. Carruthers	£278	6	8	£575	6	0
A. Graham & Sons	284	0	0	703	8	0
R. Shuttleworth	234	14	4	*522	9	11
B. Birch	*212	10	0	556	14	11
A. Jackson	276	5	0	729	16	6
A. E. Nunn & Co.	320	0	0	792	14	0
A. J. Blair	292	0	0	662	16	0
P. Robinson	357	6	8	896	7	6
T. Dirkin	225	10	0	571	11	6
J. Lourie	216	15	0	525	0	0
Egan & Sons	212	12	6	536	12	1
G. Wilson	226	1	4	528	3	0
T. W. Rigby	268	5	10	661	1	1
P. W. Hayes & Sons	279	7	6	717	4	0

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